Exos® CORVAULT 5U84
Event Descriptions Reference Guide

Abstract

This guide is for reference by storage administrators to help troubleshoot Seagate Exos CORVAULT 5U84 issues. It describes event messages that may be reported during system operation and specifies any actions recommended in response to an event.

Contents

1 Introduction

This guide is for reference by storage administrators to help troubleshoot Seagate Exos CORVAULT 5U84 issues. It describes event messages that may be reported during system operation and specifies any actions recommended in response to an event.

This guide describes all event codes that exist as of publication. Depending on your system model and firmware version, some events described in this guide may not apply to your system. The event descriptions should be considered as explanations of events that you do see. They should not be considered as descriptions of events that you should have seen but did not. In such cases those events probably do not apply to your system.

For information about product features and terms, see the Storage Management Guide for your product.

Events and event messages

When an event occurs in a storage system, an event message is recorded in the system's event log and, depending on the system's event notification settings, may also be sent to users (using email) and host-based applications (via SNMP or SMI-S).

> ☼ **TIP** A best practice is to enable notifications to be sent for events having severity Warning and above.

Each event has a numeric code that identifies the type of event that occurred, and has one of the following severities:

- Critical: A failure occurred that may cause a controller to shut down. Correct the problem *immediately*.
- Error: A failure occurred that may affect data integrity or system stability. Correct the problem as soon as possible.
- Warning: A problem occurred that may affect system stability but not data integrity. Evaluate the problem and correct it if necessary.
- Informational: A configuration or state change occurred, or a problem occurred that the system corrected. No immediate action is required. In this guide, this severity is abbreviated as "Info."
- Resolved: A condition that caused an event to be logged has been resolved.

Resources for diagnosing and resolving problems

For further information about diagnosing and resolving problems, see the troubleshooting chapter and the LED descriptions appendix in the Hardware Installation and Maintenance Guide for your product.

For a summary of storage events and corresponding SMI-S indications, see .

2 Event reference

This section lists event code variants and their recommended actions. Events are listed in the following format.

- Event code
- Event variant, in the form <event-code>.<variant-number>
- Event severity
- Event message
- Event description
- Recommended actions

1 - Disk group critical

1.1

Warning

```
A disk group is critical. (disk group: <name>, SN: <serial number>)
```

- The disk group is online and cannot tolerate another disk failure.
- If the indicated disk group is RAID 6, it is operating with degraded health due to the failure of two disks.
- If the indicated disk group is not RAID 6, it is operating with degraded health due to the failure of one disk.

A dedicated spare or global spare of the proper size and type is being used to automatically reconstruct the disk group. Events 9 and 37 are logged to indicate this.

Recommended action:

- If event 37 was not logged, a spare of the proper type and size was not available for reconstruction. Replace the failed disk with one of the same type and the same or greater capacity and, if necessary, designate it as a spare. Confirm this by checking that events 9 and 37 are logged.
- Otherwise, reconstruction automatically started and event 37 was logged. Replace the failed disk and configure the replacement as a dedicated (linear only) or global spare for future use.
- For continued optimum I/O performance, the replacement disk should have the same or better performance.
- Confirm that all failed disks have been replaced and that there are sufficient spare disks configured for future use.

1.2

Warning

```
A disk group is critical. (disk group: <name>, SN: <serial number>)
```

- The disk group is online and cannot tolerate another disk failure.
- If the indicated disk group is RAID 6, it is operating with degraded health due to the failure of two disks.
- If the indicated disk group is not RAID 6, it is operating with degraded health due to the failure of one disk.

A global spare of the proper size and type is being used to automatically reconstruct the disk group. Events 9 and 37 are logged to indicate this.

Recommended action:

- If event 37 was not logged, a spare of the proper type and size was not available for reconstruction. Replace the failed disk with one of the same type and the same or greater capacity and, if necessary, designate it as a spare. Confirm this by checking that events 9 and 37 are logged.
- Otherwise, reconstruction automatically started and event 37 was logged. Replace the failed disk and configure the replacement as a global spare for future use.
- For continued optimum I/O performance, the replacement disk should have the same or better performance.
- Confirm that all failed disks have been replaced and that there are sufficient spare disks configured for future use.

1.3

Critical

```
A disk group is critical. (disk group: <name>, SN: <serial number>)
```

- The disk group is online and cannot tolerate another disk failure, and no spare of the proper size and type is present to automatically reconstruct the disk group.
- If the indicated disk group is RAID 6, it is operating with degraded health due to the failure of two disks.
- If the indicated disk group is not RAID 6, it is operating with degraded health due to the failure of one disk.

For linear disk groups, if an available disk of the proper type and size is present and the dynamic spares feature is enabled, that disk is used to automatically reconstruct the disk group and event 37 is logged.

Recommended action:

- If event 37 was not logged, a spare of the proper type and size was not available for reconstruction. Replace the failed disk with one of the same type and the same or greater capacity and, if necessary, designate it as a spare. Confirm this by checking that events 9 and 37 are logged.
- Otherwise, reconstruction automatically started and event 37 was logged. Replace the failed disk and configure the replacement as a dedicated (linear only) or global spare for future use.
- For continued optimum I/O performance, the replacement disk should have the same or better performance.
- Confirm that all failed disks have been replaced and that there are sufficient spare disks configured for future use.

1.4

Critical

```
A disk group is critical. (disk group: <name>, SN: <serial number>)
```

- The disk group is online and cannot tolerate another disk failure.
- If the indicated disk group is RAID 6 or ADAPT, it is operating with degraded health due to the failure of two disks.
- If the indicated disk group is not RAID 6 or ADAPT, it is operating with degraded health due to the failure of one disk.

Recommended action:

- If event 37 was not logged, a spare of the proper type and size was not available for reconstruction. Replace the failed disk with one of the same type and the same or greater capacity and, if necessary, designate it as a spare. Confirm this by checking that events 9 and 37 are logged.
- Otherwise, reconstruction automatically started and event 37 was logged. Replace the failed disk and configure the replacement as a global spare for future use.
- For continued optimum I/O performance, the replacement disk should have the same or better performance.
- Confirm that all failed disks have been replaced and that there are sufficient spare disks configured for future use.

3 - Disk group offline

3.1

Error

```
A disk group went offline. (disk group: <name>, SN: <serial number>)
```

One disk failed for RAID 0 or NRAID, three disks failed for RAID 6, or two disks failed for other RAID levels. The disk group cannot be reconstructed. This is not a normal status for a disk group unless you have done a manual dequarantine.

For virtual disk groups in the Performance tier, when a disk failure occurs the data in the disk group that uses that disk will be automatically migrated to another available disk group if space is available, so no user data is lost. Data will be lost only if multiple disk failures occur in rapid succession so there is not enough time to migrate the data, or if there is insufficient space to fit the data in another tier, or if failed disks are not replaced promptly by the user.

Recommended action:

The CLI 'trust' command may be able to recover some of the data in the disk group. See the CLI help for the 'trust' command. Contact technical support for help to determine if the trust operation applies to your situation and for help to perform it.

- If you choose not to use the 'trust' command, perform these steps:
  - Replace the failed disk or disks. (Look for event 8 in the event log to determine which disks failed and for advice on replacing them.)
  - Delete the disk group (CLI 'remove disk-groups' command).
  - Re-create the disk group (CLI 'add disk-group' command).
- To prevent this problem in the future, use a fault-tolerant RAID level, configure one or more disks as spare disks, and replace failed disks promptly.

4 - Disk bad block corrected

4.1

Info

A bad block was corrected by <block correction>. LBA: <logical block address>, (disk: channel: <channel index>, ID: <device identifier>, enclosure: <enclosure number>, slot: <slot number>)

The indicated disk had a bad block which was corrected.

Recommended action:

- Monitor the error trend and whether the number of errors approaches the total number of bad-block replacements available.

6 - Create disk group completed

6.1

Info

Disk group creation completed successfully. (disk group: <name>, SN: <serial number>)

Recommended action:

- No action is required.

6.2

Info

Disk group creation was aborted. <Error> (error code: <error code>) (disk group: <name>, SN: <serial number>)

Recommended action:

- No action is required.

6.3

Warning

A failure occurred during disk group creation. <Error> (error code: <error code>) (disk group: <name>, SN: <serial number>)

A failure occurred during offline initialization of the indicated disk group. This was probably caused by a disk failure. The disk group has a status of OFFL (offline).

Recommended action:

- Look for another event logged at approximately the same time that indicates a disk failure, such as event 55, 58, or 412. Follow the recommended actions for that event.

6.4

Info

```
A failure occurred during disk group creation. <Error> (error code: <error code>) (disk group:
<name>, SN: <serial number>)
```

Disk group creation failed immediately. The user was given immediate feedback that it failed at the time they attempted to add the disk group.

Recommended action:

- No action is required.

7 - Diagnostic failure

7.1

Error

```
Controller diagnostic failure. Error code: <error code>
```

In a testing environment, a controller diagnostic failed and reports a product-specific diagnostic code.

Recommended action:

- Perform failure analysis.

8 - Drive down

8.1

Warning

```
A disk that was part of a disk group is down. Excessive media errors. <Event Details>
```

The indicated disk in the indicated disk group failed and the disk group probably has a status of FTDN (fault tolerant with a down disk), CRIT (critical), or OFFL (offline), depending on the RAID level and the number of disks that failed. If a spare is present and the disk group is not offline, the controller automatically uses the spare to reconstruct the disk group. Subsequent events indicate the changes that happen to the disk group.

When the problem is resolved, event 9 is logged.

Recommended action:

- Replace the disk with one of the same type (SSD, enterprise SAS, or midline SAS) and the same or greater capacity. For continued optimum I/O performance, the replacement disk should have performance that is the same as or better than the one it is replacing.

8.2

Warning

`A disk that was part of a disk group is down. Disk failure is imminent. <Event Details>`

The indicated disk in the indicated disk group failed and the disk group probably has a status of FTDN (fault tolerant with a down disk), CRIT (critical), or OFFL (offline), depending on the RAID level and the number of disks that failed. If a spare is present and the disk group is not offline, the controller automatically uses the spare to reconstruct the disk group. Subsequent events indicate the changes that happen to the disk group.

When the problem is resolved, event 9 is logged.

Recommended action:

- Replace the disk with one of the same type (SSD, enterprise SAS, or midline SAS) and the same or greater capacity. For continued optimum I/O performance, the replacement disk should have performance that is the same as or better than the one it is replacing.

8.3

Warning

`A disk that was part of a disk group is down. The disk has a possible hardware failure. <Event Details>`

The indicated disk in the indicated disk group failed and the disk group probably has a status of FTDN (fault tolerant with a down disk), CRIT (critical), or OFFL (offline), depending on the RAID level and the number of disks that failed. If a spare is present and the disk group is not offline, the controller automatically uses the spare to reconstruct the disk group. Subsequent events indicate the changes that happen to the disk group.

When the problem is resolved, event 9 is logged.

Recommended action:

- Replace the disk with one of the same type (SSD, enterprise SAS, or midline SAS) and the same or greater capacity. For continued optimum I/O performance, the replacement disk should have performance that is the same as or better than the one it is replacing.

8.4

Warning

`A disk that was part of a disk group is down. The disk is not supported. <Event Details>`

The indicated disk in the indicated disk group failed and the disk group probably has a status of FTDN (fault tolerant with a down disk), CRIT (critical), or OFFL (offline), depending on the RAID level and the number of disks that failed. If a spare is present and the disk group is not offline, the controller automatically uses the spare to reconstruct the disk group. Subsequent events indicate the changes that happen to the disk group.

When the problem is resolved, event 9 is logged.

Recommended action:

- Replace the disk with one of the same type (SSD, enterprise SAS, or midline SAS) and the same or greater capacity. For continued optimum I/O performance, the replacement disk should have performance that is the same as or better than the one it is replacing.

8.5

Warning

```
A disk that was part of a disk group is down. A user forced the disk out of the disk group.
<Event Details>
```

The indicated disk in the indicated disk group failed and the disk group probably has a status of FTDN (fault tolerant with a down disk), CRIT (critical), or OFFL (offline), depending on the RAID level and the number of disks that failed. If a spare is present and the disk group is not offline, the controller automatically uses the spare to reconstruct the disk group. Subsequent events indicate the changes that happen to the disk group.

When the problem is resolved, event 9 is logged.

Recommended action:

* If the associated disk group is offline or quarantined, contact technical support. Otherwise, clear the disk's metadata to reuse the disk.

8.6

Warning

```
A disk that was part of a disk group is down. RAID-6 initialization failed. <Event Details>
```

The indicated disk in the indicated disk group failed and the disk group probably has a status of FTDN (fault tolerant with a down disk), CRIT (critical), or OFFL (offline), depending on the RAID level and the number of disks that failed. If a spare is present and the disk group is not offline, the controller automatically uses the spare to reconstruct the disk group. Subsequent events indicate the changes that happen to the disk group.

When the problem is resolved, event 9 is logged.

Recommended action:

* If the associated disk group is offline or quarantined, contact technical support. Otherwise, clear the disk's metadata to reuse the disk.

8.7

Warning

```
A disk that was part of a disk group is down. A previously detected disk is no longer present.
<Event Details>
```

The indicated disk in the indicated disk group failed and the disk group probably has a status of FTDN (fault tolerant with a down disk), CRIT (critical), or OFFL (offline), depending on the RAID level and the number of disks that failed. If a spare is present and the disk group is not offline, the controller automatically uses the spare to reconstruct the disk group. Subsequent events indicate the changes that happen to the disk group.

When the problem is resolved, event 9 is logged.

Recommended action:

* Reinsert the disk or insert a replacement disk of the same type (SSD, enterprise SAS, or midline SAS) and the same or greater capacity as the one that was in the slot. For continued optimum I/O performance, the replacement disk should have performance that is the same as or better than the one it is replacing.
* If the disk then has a status of leftover (LEFTOVR), clear the metadata to reuse the disk.
* If the associated disk group is offline or quarantined, contact technical support.

8.8

Warning

`Reconstruction of a disk group failed. This disk has become leftover. <Event Details>`

The indicated disk was being used as the target disk for reconstructing the indicated disk group. While the disk group was reconstructing, another disk in the disk group failed and the status of the disk group went to OFFL (offline). The indicated disk has a status of LEFTOVR (leftover).

Recommended action:

- If the associated disk group is online, clear the indicated disk's metadata so that the disk can be re-used.
- If the associated disk group is offline, the CLI 'trust' command may be able to recover some of the data in the disk group. However, trusting a partially reconstructed disk may lead to data corruption. See the CLI help for the 'trust' command. Contact technical support for help to determine if the trust operation applies to your situation and for help to perform it.
- If the associated disk group is offline and you do not want to use the 'trust' command, perform these steps:
  - Delete the disk group (CLI 'remove disk-groups' command).
  - Clear the indicated disk's metadata so the disk can be re-used (CLI 'clear disk-metadata' command).
  - Replace the failed disk or disks. (Look for other instances of event 8 in the event log to determine which disks failed.)
  - Re-create the disk group (CLI 'add disk-group' command).

8.10

Warning

`A disk that was part of a disk group is down. The disk is down due to a protection information error. <Event Details>`

The indicated disk in the indicated disk group failed and the disk group probably has a status of FTDN (fault tolerant with a down disk), CRIT (critical), or OFFL (offline), depending on the RAID level and the number of disks that failed. If a spare is present and the disk group is not offline, the controller automatically uses the spare to reconstruct the disk group. Subsequent events indicate the changes that happen to the disk group.

When the problem is resolved, event 9 is logged.

Recommended action:

- Replace the disk with one of the same type (SSD, enterprise SAS, or midline SAS) and the same or greater capacity. For continued optimum I/O performance, the replacement disk should have performance that is the same as or better than the one it is replacing.

8.11

Warning

`A disk that was part of a disk group is down. The disk has become leftover because of too many controller-recoverable errors. <Event Details>`

The indicated disk in the indicated disk group failed and the disk group probably has a status of FTDN (fault tolerant with a down disk), CRIT (critical), or OFFL (offline), depending on the RAID level and the number of disks that failed. If a spare is present and the disk group is not offline, the controller automatically uses the spare to reconstruct the disk group. Subsequent events indicate the changes that happen to the disk group.

When the problem is resolved, event 9 is logged.

Recommended action:

- Replace the disk with one of the same type (SSD, enterprise SAS, or midline SAS) and the same or greater capacity. For continued optimum I/O performance, the replacement disk should have performance that is the same as or better than the one it is replacing.

8.12

Warning

`A disk that was part of a disk group is down. The disk is down due to degraded disk error criteria. <Event Details>`

The indicated disk in the indicated disk group failed and the disk group probably has a status of FTDN (fault tolerant with a down disk), CRIT (critical), or OFFL (offline), depending on the RAID level and the number of disks that failed. If a spare is present and the disk group is not offline, the controller automatically uses the spare to reconstruct the disk group. Subsequent events indicate the changes that happen to the disk group.

When the problem is resolved, event 9 is logged.

Recommended action:

- Replace the disk with one of the same type (SSD, enterprise SAS, or midline SAS) and the same or greater capacity. For continued optimum I/O performance, the replacement disk should have performance that is the same as or better than the one it is replacing.

8.13

Warning

`A disk that was part of a disk group is down. The disk reported a request as illegal. <Event Details>`

The indicated disk in the indicated disk group failed and the disk group probably has a status of FTDN (fault tolerant with a down disk), CRIT (critical), or OFFL (offline), depending on the RAID level and the number of disks that failed. If a spare is present and the disk group is not offline, the controller automatically uses the spare to reconstruct the disk group. Subsequent events indicate the changes that happen to the disk group.

When the problem is resolved, event 9 is logged.

Recommended action:

- Replace the disk with one of the same type (SSD, enterprise SAS, or midline SAS) and the same or greater capacity. For continued optimum I/O performance, the replacement disk should have performance that is the same as or better than the one it is replacing.

8.14

Warning

`A disk that was part of a disk group is down. The disk has become leftover due to being degraded.` `<Event Details>`

The indicated disk in the indicated disk group failed and the disk group probably has a status of FTDN (fault tolerant with a down disk), CRIT (critical), or OFFL (offline), depending on the RAID level and the number of disks that failed. If a spare is present and the disk group is not offline, the controller automatically uses the spare to reconstruct the disk group. Subsequent events indicate the changes that happen to the disk group.

When the problem is resolved, event 9 is logged.

Recommended action:

- Replace the disk with one of the same type (SSD, enterprise SAS, or midline SAS) and the same or greater capacity. For continued optimum I/O performance, the replacement disk should have performance that is the same as or better than the one it is replacing.

8.15

Warning

`A disk that was part of a disk group is down. The disk failed due to a configured performance` `threshold.` `<Event Details>`

The indicated disk in the indicated disk group failed and the disk group probably has a status of FTDN (fault tolerant with a down disk), CRIT (critical), or OFFL (offline), depending on the RAID level and the number of disks that failed. If a spare is present and the disk group is not offline, the controller automatically uses the spare to reconstruct the disk group. Subsequent events indicate the changes that happen to the disk group.

When the problem is resolved, event 9 is logged.

Recommended action:

- Replace the disk with one of the same type (SSD, enterprise SAS, or midline SAS) and the same or greater capacity. For continued optimum I/O performance, the replacement disk should have performance that is the same as or better than the one it is replacing.

8.16

Warning

`A disk that was part of a disk group is down. A disk remanufacture operation is in progress.` `<Event Details>`

The system is reworking the disk so that it can be reused. Do not remove the disk while the remanufacture operation is in progress. Completion will be indicated by event 631.

Recommended action:

- No action is required.

8.17

Warning

`A disk that was part of a disk group is down. Unknown reason. <Event Details>`

The indicated disk in the indicated disk group failed and the disk group probably has a status of FTDN (fault tolerant with a down disk), CRIT (critical), or OFFL (offline), depending on the RAID level and the number of disks that failed. If a spare is present and the disk group is not offline, the controller automatically uses the spare to reconstruct the disk group. Subsequent events indicate the changes that happen to the disk group.

When the problem is resolved, event 9 is logged.

Recommended action:

- If the associated disk group is offline or quarantined, contact technical support. Otherwise, clear the disk's metadata to reuse the disk.

9 - Spare disk used

>

9.1

Info

`A spare disk was used in a disk group to bring it back to a fault-tolerant state. (disk group: <name>, SN: <serial number>) (disk: channel: <channel index>, ID: <device identifier>, SN: <serial number>, enclosure: <enclosure number>, slot: <slot number>)`

Disk group reconstruction starts automatically. This event indicates that a problem reported by event 8 is resolved.

Recommended action:

- No action is required.

9.2

Info

`A spare disk was used in a disk group to bring it back to a fault-tolerant state. (disk group: <name>, SN: <serial number>) (disk: Unknown)`

Disk group reconstruction starts automatically. This event indicates that a problem reported by event 8 is resolved.

Recommended action:

- No action is required.

16 - Global spare disk added

16.1

Info

`A global spare disk was added. (disk: channel: <channel index>, ID: <device identifier>, SN: <serial number>, enclosure: <enclosure number>, slot: <slot number>)`

Recommended action:

- No action is required.

18 - Reconstruct disk group completed

18.1

Info

```
Full reconstruction of a disk group completed. (disk group: <name>, SN: <serial number>)
(number of uncorrectable media errors detected: <error code>)
```

None.

Recommended action:

- No action is required.

18.2

Info

```
Quick rebuild of a disk group completed. (disk group: <name>, SN: <serial number>) (number of
uncorrectable media errors detected: <error code>)
```

None.

Recommended action:

- No action is required.

18.3

Info

```
Preemptive full reconstruction of a disk group completed. (disk group: <name>, SN: <serial
number>) (number of uncorrectable media errors detected: <error code>)
```

None.

Recommended action:

- No action is required.

18.4

Info

```
Preemptive quick rebuild of a disk group completed. (disk group: <name>, SN: <serial number>)
(number of uncorrectable media errors detected: <error code>)
```

None.

Recommended action:

- No action is required.

18.5

Error

```
Full reconstruction of a disk group completed with errors. (disk group: <name>, SN: <serial
number>) (number of uncorrectable media errors detected: <error code>)
```

When a disk fails, reconstruction is performed using a spare disk. However, this operation failed. Some of the data in the other disk(s) in the disk group is unreadable (uncorrectable media error), so part of the data cannot be reconstructed.

Recommended action:

- If you do not have a backup copy of the data, take a backup.
- Look for another event logged at approximately the same time that indicates a disk failure, such as event 542. Follow the recommended actions for that event.

18.6

Error

```
Quick rebuild of a disk group completed with errors. (disk group: <name>, SN: <serial number>)
(number of uncorrectable media errors detected: <error code>)
```

When a disk fails, reconstruction is performed using a spare disk. However, this operation failed. Some of the data in the other disk(s) in the disk group is unreadable (uncorrectable media error), so part of the data cannot be reconstructed.

Recommended action:

- If you do not have a backup copy of the data, take a backup.
- Look for another event logged at approximately the same time that indicates a disk failure, such as event 542. Follow the recommended actions for that event.

18.7

Error

```
Preemptive full reconstruction of a disk group completed with errors. (disk group: <name>, SN:
<serial number>) (number of uncorrectable media errors detected: <error code>)
```

When a disk fails, reconstruction is performed using a spare disk. However, this operation failed. Some of the data in the other disk(s) in the disk group is unreadable (uncorrectable media error), so part of the data cannot be reconstructed.

Recommended action:

- If you do not have a backup copy of the data, take a backup.
- Look for another event logged at approximately the same time that indicates a disk failure, such as event 542. Follow the recommended actions for that event.

18.8

Error

```
Preemptive quick rebuild of a disk group completed with errors. (disk group: <name>, SN:
<serial number>) (number of uncorrectable media errors detected: <error code>)
```

When a disk fails, reconstruction is performed using a spare disk. However, this operation failed. Some of the data in the other disk(s) in the disk group is unreadable (uncorrectable media error), so part of the data cannot be reconstructed.

Recommended action:

- If you do not have a backup copy of the data, take a backup.
- Look for another event logged at approximately the same time that indicates a disk failure, such as event 542. Follow the recommended actions for that event.

18.9

Info

```
Full reconstruction of degraded capacity within an ADAPT ...disk group completed successfully.
(disk group: <name>, SN: <serial number>) (number of uncorrectable media errors detected:
<error code>)
```

- If the disk group that completed partially uses ADAPT, either there is no available spare space or the spare space cannot be used because of ADAPT fault-tolerant requirements.

Recommended action:

- No action is required.

18.10

Info

```
Full reconstruction of degraded capacity within an ADAPT ...disk group completed partially.
(disk group: <name>, SN: <serial number>) (number of uncorrectable media errors detected:
<error code>)
```

- If the disk group that completed partially uses ADAPT, either there is no available spare space or the spare space cannot be used because of ADAPT fault-tolerant requirements.

Recommended action:

- No action is required.

18.11

Info

```
Full reconstruction of critical capacity within an ADAPT ...disk group completed successfully.
(disk group: <name>, SN: <serial number>) (number of uncorrectable media errors detected:
<error code>)
```

- If the disk group that completed partially uses ADAPT, either there is no available spare space or the spare space cannot be used because of ADAPT fault-tolerant requirements.

Recommended action:

- No action is required.

18.12

Info

```
Full reconstruction of critical capacity within an ADAPT ...disk group completed partially.
(disk group: <name>, SN: <serial number>) (number of uncorrectable media errors detected:
<error code>)
```

- If the disk group that completed partially uses ADAPT, either there is no available spare space or the spare space cannot be used because of ADAPT fault-tolerant requirements.

Recommended action:

- No action is required.

18.13

Info

```
Full preemptive reconstruct of an ADAPT ...disk group completed partially. (disk group: <name>,
SN: <serial number>) (number of uncorrectable media errors detected: <error code>)
```

- If the disk group that completed partially uses ADAPT, either there is no available spare space or the spare space cannot be used because of ADAPT fault-tolerant requirements.

Recommended action:

- No action is required.

18.14

Info

```
Quick rebuild of degraded capacity within an ADAPT ...disk group completed successfully. (disk
group: <name>, SN: <serial number>) (number of uncorrectable media errors detected: <error
code>)
```

- If the disk group that completed partially uses ADAPT, either there is no available spare space or the spare space cannot be used because of ADAPT fault-tolerant requirements.

Recommended action:

- No action is required.

18.15

Info

```
Quick rebuild of degraded capacity within an ADAPT ...disk group completed partially. (disk
group: <name>, SN: <serial number>) (number of uncorrectable media errors detected: <error
code>)
```

- If the disk group that completed partially uses ADAPT, either there is no available spare space or the spare space cannot be used because of ADAPT fault-tolerant requirements.

Recommended action:

- No action is required.

18.16

Info

```
Quick rebuild of critical capacity within an ADAPT ...disk group completed successfully. (disk
group: <name>, SN: <serial number>) (number of uncorrectable media errors detected: <error
code>)
```

- If the disk group that completed partially uses ADAPT, either there is no available spare space or the spare space cannot be used because of ADAPT fault-tolerant requirements.

Recommended action:

- No action is required.

18.17

Info

```
Quick rebuild of critical capacity within an ADAPT ...disk group completed partially. (disk
group: <name>, SN: <serial number>) (number of uncorrectable media errors detected: <error
code>)
```

- If the disk group that completed partially uses ADAPT, either there is no available spare space or the spare space cannot be used because of ADAPT fault-tolerant requirements.

Recommended action:

- No action is required.

18.18

Info

```
Quick preemptive rebuild of an ADAPT ...disk group completed partially. (disk group: <name>,
SN: <serial number>) (number of uncorrectable media errors detected: <error code>)
```

- If the disk group that completed partially uses ADAPT, either there is no available spare space or the spare space cannot be used because of ADAPT fault-tolerant requirements.

Recommended action:

- No action is required.

18.19

Info

```
Full preemptive reconstruction of degraded capacity within an ADAPT ...disk group completed
successfully. (disk group: <name>, SN: <serial number>) (number of uncorrectable media errors
detected: <error code>)
```

- If the disk group that completed partially uses ADAPT, either there is no available spare space or the spare space cannot be used because of ADAPT fault-tolerant requirements.

Recommended action:

- No action is required.

18.20

Info

```
Full preemptive reconstruction of degraded capacity within an ADAPT ...disk group completed
partially. (disk group: <name>, SN: <serial number>) (number of uncorrectable media errors
detected: <error code>)
```

- If the disk group that completed partially uses ADAPT, either there is no available spare space or the spare space cannot be used because of ADAPT fault-tolerant requirements.

Recommended action:

- No action is required.

18.21

Info

```
Full preemptive reconstruction of critical capacity within an ADAPT ...disk group completed
successfully. (disk group: <name>, SN: <serial number>) (number of uncorrectable media errors
detected: <error code>)
```

- If the disk group that completed partially uses ADAPT, either there is no available spare space or the spare space cannot be used because of ADAPT fault-tolerant requirements.

Recommended action:

- No action is required.

18.22

Info

```
Full preemptive reconstruction of critical capacity within an ADAPT ...disk group completed
partially. (disk group: <name>, SN: <serial number>) (number of uncorrectable media errors
detected: <error code>)
```

- If the disk group that completed partially uses ADAPT, either there is no available spare space or the spare space cannot be used because of ADAPT fault-tolerant requirements.

Recommended action:

- No action is required.

18.23

Info

```
Full preemptive reconstruction of an ADAPT ...disk group completed partially. (disk group:
<name>, SN: <serial number>) (number of uncorrectable media errors detected: <error code>)
```

- If the disk group that completed partially uses ADAPT, either there is no available spare space or the spare space cannot be used because of ADAPT fault-tolerant requirements.

Recommended action:

- No action is required.

18.24

Info

```
Preemptive quick rebuild of degraded capacity within an ADAPT ...disk group completed
successfully. (disk group: <name>, SN: <serial number>) (number of uncorrectable media errors
detected: <error code>)
```

- If the disk group that completed partially uses ADAPT, either there is no available spare space or the spare space cannot be used because of ADAPT fault-tolerant requirements.

Recommended action:

- No action is required.

18.25

Info

```
Preemptive quick rebuild of degraded capacity within an ADAPT ...disk group completed
partially. (disk group: <name>, SN: <serial number>) (number of uncorrectable media errors
detected: <error code>)
```

- If the disk group that completed partially uses ADAPT, either there is no available spare space or the spare space cannot be used because of ADAPT fault-tolerant requirements.

Recommended action:

- No action is required.

18.26

Info

```
Preemptive quick rebuild of critical capacity within an ADAPT ...disk group completed
successfully. (disk group: <name>, SN: <serial number>) (number of uncorrectable media errors
detected: <error code>)
```

- If the disk group that completed partially uses ADAPT, either there is no available spare space or the spare space cannot be used because of ADAPT fault-tolerant requirements.

Recommended action:

- No action is required.

18.27

Info

```
Preemptive quick rebuild of critical capacity within an ADAPT ...disk group completed
partially. (disk group: <name>, SN: <serial number>) (number of uncorrectable media errors
detected: <error code>)
```

- If the disk group that completed partially uses ADAPT, either there is no available spare space or the spare space cannot be used because of ADAPT fault-tolerant requirements.

Recommended action:

- No action is required.

18.28

Info

```
Preemptive quick rebuild of an ADAPT ...disk group completed partially. (disk group: <name>,
SN: <serial number>) (number of uncorrectable media errors detected: <error code>)
```

- If the disk group that completed partially uses ADAPT, either there is no available spare space or the spare space cannot be used because of ADAPT fault-tolerant requirements.

Recommended action:

- No action is required.

19 - Rescan bus completed

19.1

Info

```
A rescan-bus operation was done. (number of disks that were found: <number of disks>, number of
enclosures that were found: <number of enclosures>) (rescan reason: initiated by a user, rescan
reason code: <rescan reason code>)
```

Recommended action:

- No action is required.

19.2

Info

```
A rescan-bus operation was done. (number of disks that were found: <number of disks>, number of
enclosures that were found: <number of enclosures>) (rescan reason: initiated by internal
logic, rescan reason code: <rescan reason code>)
```

Recommended action:

- No action is required.

20 - Firmware update completed

20.1

Info

```
Storage Controller firmware was installed successfully. (new version: <version string>)
```

Recommended action:

- No action is required.

20.2

Info

```
Storage Controller firmware was installed successfully. (new version: <version string>,
baselevel: <version string>)
```

Recommended action:

- No action is required.

21 - Verify disk group completed

21.1

Info

`A verify-disk-group job was aborted. <error code> (error code: <error code>) (disk group: <name>, SN: <serial number>)`

Recommended action:

- No action is required.

21.2

Warning

`A verify-disk-group job did not complete because of an internally detected condition such as a failed disk. (number of errors found: <error code>) (disk group: <name>, SN: <serial number>)`

If a disk fails, data may be at risk.

Recommended action:

- Resolve any non-disk hardware problems, such as a cooling problem or a faulty controller module, expansion module, or power supply.
- Check whether any disks in the disk group have logged SMART events or unrecoverable read errors.
    - If so, and the disk group is a non-fault-tolerant RAID level (RAID 0 or non-RAID), copy the data to a different disk group and replace the faulty disks.
    - If so, and the disk group is a fault-tolerant RAID level, check the current state of the disk group. If it is not FTOL then back up the data as data may be at risk. If it is FTOL then replace the indicated disk. If more than one disk in the same disk group has logged a SMART event, back up the data and replace each disk one at a time. In virtual storage it may be possible to remove the affected disk group, which will drain its data to another disk group, and then re-add the disk group.

21.3

Error

`A verify-disk-group job failed. <error code> (error code: <error code>) (number of errors found: <error code>) (disk group: <name>, SN: <serial number>)`

Recommended action:

- Perform a disk group scrub to find and correct the errors.

21.4

Error

`A verify-disk-group job completed. No errors were found. (disk group: <name>, SN: <serial number>)`

Recommended action:

- Perform a disk group scrub to find and correct the errors.

21.5

Error

A verify-disk-group job completed. Errors were found and corrected. (number of corrections made: <error code>) (disk group: <name>, SN: <serial number>)

Recommended action:

- Perform a disk group scrub to find and correct the errors.

21.6

Error

A verify-disk-group job completed. Errors were found but not corrected. (number of errors found: <error code>) (disk group: <name>, SN: <serial number>)

Recommended action:

- Perform a disk group scrub to find and correct the errors.

23 - Create disk group started

23.1

Info

Disk group creation started, but was not successful. (disk group: <name>, SN: <serial number>) (error code: <error code>...<possible additional parameters>)

Recommended action:

- No action is required.

23.2

Info

Disk group creation started. (disk group: <name>, SN: <serial number>) (RAID50, number of disks: <number of low levels>x<number of drives per low level>...<possible additional parameters>)

Recommended action:

- No action is required.

23.3

Info

Disk group creation started. (disk group: <name>, SN: <serial number>) (<RAID level>, number of disks: <number of disks>...<possible additional parameters>)

Recommended action:

- No action is required.

25 - Disk group statistics reset

25.1

Info

`Disk group statistics were reset for all disk groups.`

Recommended action:

- No action is required.

25.2

Info

`Disk group statistics were reset. (disk group: <name>, SN: <serial number>)`

Recommended action:

- No action is required.

28 - Controller parameters changed

28.1

Info

`Controller configuration parameters were changed.`

This event is logged when general configuration changes are made. For example, utility priority, remote notification settings, user interface passwords, and network port IP values. This event is not logged when changes are made to disk group or volume configuration.

Recommended action:

- No action is required.

31 - Spare disk deleted

31.1

Info

`A spare disk was deleted. (disk: channel: <channel index>, ID: <device identifier>, SN: <serial number>, enclosure: <enclosure number>, slot: <slot number>)`

The indicated disk is no longer designated as a spare.

Recommended action:

- No action is required.

32 - Verify disk group started

32.1

Info

`Disk group verification was started. (disk group: <name>, SN: <serial number>)`

None.

Recommended action:

- No action is required.

33 - Time/Date set

33.1

Info

`Date/time was changed to <time>.`

This event is logged before the change happens, so the timestamp of the event shows the old time. This event may occur often if NTP is enabled.

Recommended action:

- No action is required.

34 - Controller defaults restored

34.1

Info

`Default configuration was restored.`

None.

Recommended action:

- For an FC controller, restart it to make the default loop ID take effect.

35 - Utility aborted

35.1

Info

`A disk group job was aborted. (disk group: <name>, SN: <serial number>, job: <identifier>)`

Recommended action:

- No action is required.

37 - Reconstruct disk group started

37.1

Info

`Disk group standard full reconstruction started. (disk group: <name>, SN: <serial number>)`
`(disk: channel: <channel index>, ID: <numeric value>, SN: <serial number>, enclosure:`
`<enclosure number>, slot: <slot number>)`

When complete, event 18 is logged.

Recommended action:

- No action is required.

37.3
Info

Disk group preemptive full reconstruction started. (disk group: <name>, SN: <serial number>)
(disk: channel: <channel index>, ID: <numeric value>, SN: <serial number>, enclosure:
<enclosure number>, slot: <slot number>)

When complete, event 18 is logged.

Recommended action:

- No action is required.

37.5
Info

Disk group reconstruction started. (disk group: <name>, SN: <serial number>) (disk: channel:
<channel index>, ID: <numeric value>, SN: <serial number>, enclosure: <enclosure number>,
slot: <slot number>)

When complete, event 18 is logged.

Recommended action:

- No action is required.

37.6
Info

Disk group standard full reconstruction started. (disk group: <name>, SN: <serial number>)
(disk: unknown)

When complete, event 18 is logged.

Recommended action:

- No action is required.

37.8
Info

Disk group preemptive full reconstruction started. (disk group: <name>, SN: <serial number>)
(disk: unknown)

When complete, event 18 is logged.

Recommended action:

- No action is required.

37.10
Info

Disk group reconstruction started. (disk group: <name>, SN: <serial number>) (disk: unknown)

When complete, event 18 is logged.

Recommended action:

- No action is required.

37.11

Info

```
Standard full reconstruction of degraded capacity within an ADAPT ...disk group started. (disk
group: <name>, SN: <serial number>)
```

When complete, event 18 is logged.

Recommended action:

- No action is required.

37.13

Info

```
Preemptive full reconstruction of degraded capacity within an ADAPT ...disk group started.
(disk group: <name>, SN: <serial number>)
```

When complete, event 18 is logged.

Recommended action:

- No action is required.

37.15

Info

```
Standard full reconstruction of critical capacity within an ADAPT ...disk group started. (disk
group: <name>, SN: <serial number>)
```

When complete, event 18 is logged.

Recommended action:

- No action is required.

37.17

Info

```
Preemptive full reconstruction of critical capacity within an ADAPT ...disk group started.
(disk group: <name>, SN: <serial number>)
```

When complete, event 18 is logged.

Recommended action:

- No action is required.

39 - Sensor warning

39.1

Warning

`An unknown sensor warning occurred. (p1: <drive index>, p2: <channel index>)`

A sensor monitored a temperature or voltage in the warning range. When the problem is resolved, event 47 is logged for the component that logged event 39.

If the event refers to a disk sensor, disk behavior may be unpredictable in this temperature range.

Check the event log to determine if more than one disk has reported this event.

- If multiple disks report this condition there could be a problem in the environment.
- If one disk reports this condition, there could be a problem in the environment or the disk has failed.

Recommended action:

- Check that the storage system's fans are running.
- Check that the ambient temperature is not too warm. The controller enclosure operating range is 5°C to 40°C (41°F to 104°F). The expansion enclosure operating range is 5°C to 40°C (41°F to 104°F).
- Check for any obstructions to the airflow.
- Check that there is a module or blank plate in every module slot in the enclosure.
- If none of the above explanations apply, replace the disk or controller module that logged the error.

39.2

Warning

`A disk temperature sensor reached a warning threshold. (measured temperature: <temperature> C) (threshold temperature: <temperature> C)`

A sensor monitored a temperature or voltage in the warning range. When the problem is resolved, event 47 is logged for the component that logged event 39.

If the event refers to a disk sensor, disk behavior may be unpredictable in this temperature range.

Check the event log to determine if more than one disk has reported this event.

- If multiple disks report this condition there could be a problem in the environment.
- If one disk reports this condition, there could be a problem in the environment or the disk has failed.

Recommended action:

- Check that the storage system's fans are running.
- Check that the ambient temperature is not too warm. The controller enclosure operating range is 5°C to 40°C (41°F to 104°F). The expansion enclosure operating range is 5°C to 40°C (41°F to 104°F).
- Check for any obstructions to the airflow.
- Check that there is a module or blank plate in every module slot in the enclosure.
- If none of the above explanations apply, replace the disk or controller module that logged the error.

39.3

Warning

```
The right fan warning occurred because the the fan is operating at an improperly high speed.
(measured speed: <temperature> rpm) (threshold speed: <temperature> rpm)
```

A sensor monitored a temperature or voltage in the warning range. When the problem is resolved, event 47 is logged for the component that logged event 39.

If the event refers to a disk sensor, disk behavior may be unpredictable in this temperature range.

Check the event log to determine if more than one disk has reported this event.

- If multiple disks report this condition there could be a problem in the environment.
- If one disk reports this condition, there could be a problem in the environment or the disk has failed.

Recommended action:

- Check that the storage system's fans are running.
- Check that the ambient temperature is not too warm. The controller enclosure operating range is 5°C to 40°C (41°F to 104°F). The expansion enclosure operating range is 5°C to 40°C (41°F to 104°F).
- Check for any obstructions to the airflow.
- Check that there is a module or blank plate in every module slot in the enclosure.
- If none of the above explanations apply, replace the disk or controller module that logged the error.

39.4

Warning

```
The right fan warning occurred because the the fan is operating at an improperly low speed.
(measured speed: <temperature> rpm) (threshold speed: <temperature> rpm)
```

A sensor monitored a temperature or voltage in the warning range. When the problem is resolved, event 47 is logged for the component that logged event 39.

If the event refers to a disk sensor, disk behavior may be unpredictable in this temperature range.

Check the event log to determine if more than one disk has reported this event.

- If multiple disks report this condition there could be a problem in the environment.
- If one disk reports this condition, there could be a problem in the environment or the disk has failed.

Recommended action:

- Check that the storage system's fans are running.
- Check that the ambient temperature is not too warm. The controller enclosure operating range is 5°C to 40°C (41°F to 104°F). The expansion enclosure operating range is 5°C to 40°C (41°F to 104°F).
- Check for any obstructions to the airflow.
- Check that there is a module or blank plate in every module slot in the enclosure.
- If none of the above explanations apply, replace the disk or controller module that logged the error.

39.5

Warning

`The left fan warning occurred because the the fan is operating at an improperly high speed. (measured speed: <temperature> rpm) (threshold speed: <temperature> rpm)`

A sensor monitored a temperature or voltage in the warning range. When the problem is resolved, event 47 is logged for the component that logged event 39.

If the event refers to a disk sensor, disk behavior may be unpredictable in this temperature range.

Check the event log to determine if more than one disk has reported this event.

- If multiple disks report this condition there could be a problem in the environment.
- If one disk reports this condition, there could be a problem in the environment or the disk has failed.

Recommended action:

- Check that the storage system's fans are running.
- Check that the ambient temperature is not too warm. The controller enclosure operating range is 5°C to 40°C (41°F to 104°F). The expansion enclosure operating range is 5°C to 40°C (41°F to 104°F).
- Check for any obstructions to the airflow.
- Check that there is a module or blank plate in every module slot in the enclosure.
- If none of the above explanations apply, replace the disk or controller module that logged the error.

39.6

Warning

`The left fan warning occurred because the the fan is operating at an improperly low speed. (measured speed: <temperature> rpm) (threshold speed: <temperature> rpm)`

A sensor monitored a temperature or voltage in the warning range. When the problem is resolved, event 47 is logged for the component that logged event 39.

If the event refers to a disk sensor, disk behavior may be unpredictable in this temperature range.

Check the event log to determine if more than one disk has reported this event.

- If multiple disks report this condition there could be a problem in the environment.
- If one disk reports this condition, there could be a problem in the environment or the disk has failed.

Recommended action:

- Check that the storage system's fans are running.
- Check that the ambient temperature is not too warm. The controller enclosure operating range is 5°C to 40°C (41°F to 104°F). The expansion enclosure operating range is 5°C to 40°C (41°F to 104°F).
- Check for any obstructions to the airflow.
- Check that there is a module or blank plate in every module slot in the enclosure.
- If none of the above explanations apply, replace the disk or controller module that logged the error.

39.7

Warning

`<Sensor String>`

A sensor monitored a temperature or voltage in the warning range. When the problem is resolved, event 47 is logged for the component that logged event 39.

If the event refers to a disk sensor, disk behavior may be unpredictable in this temperature range.

Check the event log to determine if more than one disk has reported this event.

- If multiple disks report this condition there could be a problem in the environment.
- If one disk reports this condition, there could be a problem in the environment or the disk has failed.

Recommended action:

- Check that the storage system's fans are running.
- Check that the ambient temperature is not too warm. The controller enclosure operating range is 5°C to 40°C (41°F to 104°F). The expansion enclosure operating range is 5°C to 40°C (41°F to 104°F).
- Check for any obstructions to the airflow.
- Check that there is a module or blank plate in every module slot in the enclosure.
- If none of the above explanations apply, replace the disk or controller module that logged the error.

40 - Sensor failure

40.1

Error

`An unknown sensor failure occurred. (p1: <voltage>, p2: <temperature>)`

A sensor monitored a temperature or voltage in the failure range. When the problem is resolved, event 47 is logged for the component that logged event 40.

Recommended action:

- Check that the storage system's fans are running.
- Check that the ambient temperature is not too warm. The controller enclosure operating range is 5°C to 40°C (41°F to 104°F). The expansion enclosure operating range is 5°C to 40°C (41°F to 104°F).
- Check for any obstructions to the airflow.
- Check that there is a module or blank plate in every module slot in the enclosure.
- If none of the above explanations apply, replace the disk or controller module that logged the error.

40.2

Error

```
A disk temperature sensor reached a failure threshold. (measured temperature: <temperature> C)
(threshold temperature: <temperature> C)
```

A sensor monitored a temperature or voltage in the failure range. When the problem is resolved, event 47 is logged for the component that logged event 40.

Recommended action:

- Check that the storage system's fans are running.
- Check that the ambient temperature is not too warm. The controller enclosure operating range is 5°C to 40°C (41°F to 104°F). The expansion enclosure operating range is 5°C to 40°C (41°F to 104°F).
- Check for any obstructions to the airflow.
- Check that there is a module or blank plate in every module slot in the enclosure.
- If none of the above explanations apply, replace the disk or controller module that logged the error.

40.3

Error

```
The right fan failure occurred because the the fan is operating at an improperly high speed.
(measured speed: <temperature> rpm) (threshold speed: <temperature> rpm)
```

A sensor monitored a temperature or voltage in the failure range. When the problem is resolved, event 47 is logged for the component that logged event 40.

Recommended action:

- Check that the storage system's fans are running.
- Check that the ambient temperature is not too warm. The controller enclosure operating range is 5°C to 40°C (41°F to 104°F). The expansion enclosure operating range is 5°C to 40°C (41°F to 104°F).
- Check for any obstructions to the airflow.
- Check that there is a module or blank plate in every module slot in the enclosure.
- If none of the above explanations apply, replace the disk or controller module that logged the error.

40.4

Error

```
The right fan failure occurred because the the fan is operating at an improperly low speed.
(measured speed: <temperature> rpm) (threshold speed: <temperature> rpm)
```

A sensor monitored a temperature or voltage in the failure range. When the problem is resolved, event 47 is logged for the component that logged event 40.

Recommended action:

- Check that the storage system's fans are running.
- Check that the ambient temperature is not too warm. The controller enclosure operating range is 5°C to 40°C (41°F to 104°F). The expansion enclosure operating range is 5°C to 40°C (41°F to 104°F).
- Check for any obstructions to the airflow.
- Check that there is a module or blank plate in every module slot in the enclosure.
- If none of the above explanations apply, replace the disk or controller module that logged the error.

40.5

Error

```
The left fan failure occurred because the the fan is operating at an improperly high speed.
(measured speed: <temperature> rpm) (threshold speed: <temperature> rpm)
```

A sensor monitored a temperature or voltage in the failure range. When the problem is resolved, event 47 is logged for the component that logged event 40.

Recommended action:

- Check that the storage system's fans are running.
- Check that the ambient temperature is not too warm. The controller enclosure operating range is 5°C to 40°C (41°F to 104°F). The expansion enclosure operating range is 5°C to 40°C (41°F to 104°F).
- Check for any obstructions to the airflow.
- Check that there is a module or blank plate in every module slot in the enclosure.
- If none of the above explanations apply, replace the disk or controller module that logged the error.

40.6

Error

```
The left fan failure occurred because the the fan is operating at an improperly low speed.
(measured speed: <temperature> rpm) (threshold speed: <temperature> rpm)
```

A sensor monitored a temperature or voltage in the failure range. When the problem is resolved, event 47 is logged for the component that logged event 40.

Recommended action:

- Check that the storage system's fans are running.
- Check that the ambient temperature is not too warm. The controller enclosure operating range is 5°C to 40°C (41°F to 104°F). The expansion enclosure operating range is 5°C to 40°C (41°F to 104°F).
- Check for any obstructions to the airflow.
- Check that there is a module or blank plate in every module slot in the enclosure.
- If none of the above explanations apply, replace the disk or controller module that logged the error.

40.7

Error

```
<Sensor String>
```

A sensor monitored a temperature or voltage in the failure range. When the problem is resolved, event 47 is logged for the component that logged event 40.

Recommended action:

- Check that the storage system's fans are running.
- Check that the ambient temperature is not too warm. The controller enclosure operating range is 5°C to 40°C (41°F to 104°F). The expansion enclosure operating range is 5°C to 40°C (41°F to 104°F).
- Check for any obstructions to the airflow.
- Check that there is a module or blank plate in every module slot in the enclosure.
- If none of the above explanations apply, replace the disk or controller module that logged the error.

41 - Dedicated spare added

41.1

Info

```
A spare disk drive was added to a disk group (disk group: <name>, SN: <serial number>) (disk:
channel: <channel index>, ID: <device identifier>, SN: <serial number>, enclosure: <enclosure
number>, slot: <slot number>)
```

None.

Recommended action:

- No action is required.

43 - Disk group deleted

43.1

Info

```
A disk group was removed. (disk group: <name>, SN: <serial number>)
```

None.

Recommended action:

- No action is required.

44 - Unwritable cache data exists

44.1

Warning

```
Unwritable write-back cache data exists for a volume. (pool: <name>, volume: <volume name>, SN:
<serial number>) It comprises <numeric value>% of cache space.
```

The controller contains cache data for the indicated volume but the corresponding disk group is not online.

Recommended action:

- Determine the reason that the disks comprising the disk group are not online.
- If an enclosure is down, determine corrective action.
- If the disk group is no longer needed, you can clear the orphan data. This will result in lost data.
- If the disk group is missing and was not intentionally removed, see "Resources for diagnosing and resolving problems" in the Event Descriptions Reference Guide.

47 - Sensor warning cleared

47.1

Info

```
A disk temperature warning cleared. (disk: channel: <channel index>, ID: <numeric value>, SN:
<serial number>, enclosure: <enclosure number>, slot: <slot number>)
```

This event indicates that a problem reported by event 39, 40, or 524 is resolved.

Recommended action:

- No action is required.

47.2

Info

`A previous temperature, voltage, capacitance or current warning or failure cleared.`

This event indicates that a problem reported by event 39, 40, or 524 is resolved.

Recommended action:

- No action is required.

48 - Disk group name changed

48.1

Info

`A disk group name was changed. (old name: <serial number>, new name: <name>, SN: <serial number>)`

None.

Recommended action:

- No action is required.

49 - SCSI maintenance command

49.1

Info

`A SCSI maintenance command completed successfully. (command: <numeric value>. disk: Unknown, SN: <serial number>, enclosure: <enclosure number>, slot: <slot number>.)`

A lengthy SCSI maintenance command has completed. (This typically occurs during disk firmware update.)

Recommended action:

- No action is required.

49.2

Info

`A SCSI maintenance command completed successfully. (command: <numeric value>. disk: Unknown, SN: <serial number>, enclosure: <enclosure number>, slot: <slot number>. <detailed error information>)`

A lengthy SCSI maintenance command has completed. (This typically occurs during disk firmware update.)

Recommended action:

- No action is required.

49.3

Info

A SCSI maintenance command completed successfully. (command: <numeric value>. disk: channel: <channel index>, ID: <identifier>, SN: <serial number>, enclosure: <enclosure number>, slot: <slot number>.)

A lengthy SCSI maintenance command has completed. (This typically occurs during disk firmware update.)

Recommended action:

- No action is required.

49.4

Info

A SCSI maintenance command completed successfully. (command: <numeric value>. disk: channel: <channel index>, ID: <identifier>, SN: <serial number>, enclosure: <enclosure number>, slot: <slot number>. <detailed error information>)

A lengthy SCSI maintenance command has completed. (This typically occurs during disk firmware update.)

Recommended action:

- No action is required.

49.5

Info

A SCSI maintenance command completed with error. (command: <numeric value>. disk: Unknown, SN: <serial number>, enclosure: <enclosure number>, slot: <slot number>. [error code: <error code>])

A lengthy SCSI maintenance command has completed. (This typically occurs during disk firmware update.)

Recommended action:

- No action is required.

49.6

Info

A SCSI maintenance command completed with error. (command: <numeric value>. disk: Unknown, SN: <serial number>, enclosure: <enclosure number>, slot: <slot number>. <detailed error information> [error code: <error code>])

A lengthy SCSI maintenance command has completed. (This typically occurs during disk firmware update.)

Recommended action:

- No action is required.

49.7

Info

```
A SCSI maintenance command completed with error. (command: <numeric value>. disk: channel:
<channel index>, ID: <identifier>, SN: <serial number>, enclosure: <enclosure number>, slot:
<slot number>. [error code: <error code>])
```

A lengthy SCSI maintenance command has completed. (This typically occurs during disk firmware update.)

Recommended action:

- No action is required.

49.8

Info

```
A SCSI maintenance command completed with error. (command: <numeric value>. disk: channel:
<channel index>, ID: <identifier>, SN: <serial number>, enclosure: <enclosure number>, slot:
<slot number>. <detailed error information> [error code: <error code>])
```

A lengthy SCSI maintenance command has completed. (This typically occurs during disk firmware update.)

Recommended action:

- No action is required.

50 - Correctable ECC error

50.1

Warning

```
A correctable ECC error occurred in cache memory. (<detailed error information>)
```

- This event is logged with Warning severity to provide information that may be useful to technical support, but no action is required now. It will be logged with Error severity if it is necessary to replace the controller module.

Recommended action:

- No action is required.

50.2

Error

```
A correctable ECC error occurred in cache memory. (<detailed error information>)
```

- A correctable ECC error occurred in cache memory more than 10 times during a 24-hour period, indicating a probable hardware fault.

Recommended action:

- Replace the controller module that logged this event.

51 - Uncorrectable ECC error

51.1

Warning

`An uncorrectable ECC error occurred in cache memory. (<detailed error information>)`

- This event is logged with Warning severity to provide information that may be useful to technical support, but no action is required now. It will be logged with Error severity if it is necessary to replace the controller module.

Recommended action:

- No action is required.

51.2

Error

`An uncorrectable ECC error occurred in cache memory. (<detailed error information>)`

- An uncorrectable ECC error occurred in cache memory more than once during a 48-hour period, indicating a probable hardware fault.

Recommended action:

- Replace the controller module that logged this event.

52 - Expand disk group started

52.1

Info

`An expand-disk-group job started. (disk group: <name>, SN: <serial number>, number of disks added: <count>)`

Depending on the RAID level, this operation can complete very quickly (for ADAPT) or take days or weeks to complete. Allow adequate time for the expansion to complete.

When complete, event 53 is logged.

Recommended action:

- No action is required.

53 - Expand disk group completed

53.1

Info

`An expand-disk-group job completed successfully. (disk group: <name>, SN: <serial number>)`

Disk group expansion either completed successfully, failed immediately, or was aborted by a user.

Recommended action:

- If the expansion failed because of a disk problem, replace the disk with one of the same type (SSD, enterprise SAS, or midline SAS) and the same or greater capacity. For continued optimum I/O performance, the replacement disk should have performance that is the same as or better than the one it is replacing. If disk group reconstruction starts, wait for it to complete and then retry the expansion

53.2

Warning

```
An expand-disk-group job failed. <detailed error information> (error code: <error code>) (disk
group: <name>, SN: <serial number>)
```

Too many errors occurred during disk group expansion to allow the expansion to continue.

Recommended action:

- If the expansion failed because of a disk problem, replace the disk with one of the same type (SSD, enterprise SAS, or midline SAS) and the same or greater capacity. For continued optimum I/O performance, the replacement disk should have performance that is the same as or better than the one it is replacing. If disk group reconstruction starts, wait for it to complete and then retry the expansion

53.3

Info

```
An expand-disk-group job completed successfully. (disk group: <name>, SN: <serial number>) The
ADAPT user space added was <numeric value>.
```

Disk group expansion either completed successfully, failed immediately, or was aborted by a user.

Recommended action:

- If the expansion failed because of a disk problem, replace the disk with one of the same type (SSD, enterprise SAS, or midline SAS) and the same or greater capacity. For continued optimum I/O performance, the replacement disk should have performance that is the same as or better than the one it is replacing. If disk group reconstruction starts, wait for it to complete and then retry the expansion

55 - Disk SMART event

55.1

Warning

```
A disk drive reported a SMART event. (disk: channel: <channel index>, ID: <device identifier>,
SN: <serial number>, enclosure: <enclosure number>, slot: <slot number>) (<name>)
```

A SMART event indicates impending disk failure.

Recommended action:

- Resolve any non-disk hardware problems, especially a cooling problem or a faulty power supply.
- If the disk is in a disk group that uses a non-fault-tolerant RAID level (RAID 0 or non-RAID), copy the data to a different disk group and replace the faulty disk.
- If the disk is in a disk group that uses a fault-tolerant RAID level, check the current state of the disk group. If it is not FTOL then back up the data as data may be at risk. If it is FTOL then replace the indicated disk. If more than one disk in the same disk group has logged a SMART event, back up the data and replace each disk one at a time. In virtual storage it may be possible to remove the affected disk group, which will drain its data to another disk group, and then re-add the disk group.

56 - Storage Controller booted

56.1

Info

Storage Controller booted up (cold boot – power up). SC firmware version: <version string>

Recommended action:

- No action is required.

56.2

Info

Storage Controller booted up (cold boot – power up). SC firmware version: <version string> (baselevel: <version string>)

Recommended action:

- No action is required.

56.3

Info

Storage Controller booted up (warm boot – kill was released or a reset occurred). SC firmware version: <version string>

Recommended action:

- No action is required.

56.4

Info

Storage Controller booted up (warm boot – kill was released or a reset occurred). SC firmware version: <version string> (baselevel: <version string>)

Recommended action:

- No action is required.

56.5

Info

Storage Controller booted up. SC firmware version: <version string>

Recommended action:

- No action is required.

56.6

Info

Storage Controller booted up. SC firmware version: <version string> (baselevel: <version string>)

Recommended action:

- No action is required.

58 - Disk error detected

58.1

Info

```
An event was reported by a disk drive. (disk: channel: <channel index>, ID: <device
identifier>, SN: <serial number>, enclosure: <enclosure number>, slot: <slot number>) (<key
code qualifier decode string>) (<device identifier>)<device identifier>(<sense key decode
string>, <additional sense code qualifier decode string>)
```

None.

Recommended action:

- No action is required.

58.2

Error

```
An error was reported by a disk drive. (disk: channel: <channel index>, ID: <device
identifier>, SN: <serial number>, enclosure: <enclosure number>, slot: <slot number>) (<key
code qualifier decode string>) (<device identifier>)<device identifier>(<sense key decode
string>, <additional sense code qualifier decode string>)
```

A disk drive detected a serious error, such as a parity error or disk hardware failure.

Recommended action:

- Replace the disk with one of the same type (SSD, enterprise SAS, or midline SAS) and the same or greater capacity. For
  continued optimum I/O performance, the replacement disk should have performance that is the same as or better than the
  one it is replacing.

58.3

Warning

```
An error was reported by a disk drive. (disk: channel: <channel index>, ID: <device
identifier>, SN: <serial number>, enclosure: <enclosure number>, slot: <slot number>) (<key
code qualifier decode string>) (<device identifier>)<device identifier>(<sense key decode
string>, <additional sense code qualifier decode string>)
```

A disk drive reset itself due to an internal logic error.

Recommended action:

- The first time this event is logged with Warning severity, if the indicated disk is not running the latest firmware, update the
  disk firmware.
- If this event is logged with Warning severity for the same disk more than five times in one week, and the indicated disk is
  running the latest firmware, replace the disk with one of the same type (SSD, enterprise SAS, or midline SAS) and the same
  or greater capacity. For continued optimum I/O performance, the replacement disk should have performance that is the
  same as or better than the one it is replacing.

59 - Disk channel error

59.1

Warning

```
Disk channel event. (channel: <channel index>, ID: <device identifier>, SN: <serial number>,
enclosure: <enclosure number>, slot: <slot number>): <text> ...<text>
```

The controller detected a parity error while communicating with the indicated SCSI device. The error was detected by the controller, not the disk.

Recommended action:

- If the event indicates that a disk or an expansion module is bad, replace the indicated device.

59.2

Info

```
Disk channel event. (channel: <channel index>, ID: <device identifier>, SN: <serial number>,
enclosure: <enclosure number>, slot: <slot number>): <text> ...<text>
```

The controller detected a non-parity event while communicating with the indicated SCSI device. The event was detected by the controller, not the disk.

Recommended action:

- No action is required.

59.3

Warning

```
Disk channel event. (channel: <channel index>, ID: <device identifier>, SN: <serial number>,
enclosure: <enclosure number>, slot: <slot number>): <text> ...<numeric value> additional
```

The controller detected a parity error while communicating with the indicated SCSI device. The error was detected by the controller, not the disk.

Recommended action:

- If the event indicates that a disk or an expansion module is bad, replace the indicated device.

59.4

Info

```
Disk channel event. (channel: <channel index>, ID: <device identifier>, SN: <serial number>,
enclosure: <enclosure number>, slot: <slot number>): <text> ...<numeric value> additional
```

The controller detected a non-parity event while communicating with the indicated SCSI device. The event was detected by the controller, not the disk.

Recommended action:

- No action is required.

61 - Disk channel failure

61.1

Error

`Disk channel failure. This may indicate a hardware failure, but the controller will attempt to recover. (Event context: <numeric value>)`

The controller reset a disk channel to recover from a communication error. This event is logged to identify an error trend over time.

Recommended action:

- If the controller recovers, no action is required.
- View other logged events to determine other action to take.

61.2

Error

`Disk channel failure. This may indicate a hardware failure, but the controller will attempt to recover. (channel: <channel index>, Excessive errors)`

The controller reset a disk channel to recover from a communication error. This event is logged to identify an error trend over time.

Recommended action:

- If the controller recovers, no action is required.
- View other logged events to determine other action to take.

61.3

Error

`Disk channel failure. This may indicate a hardware failure, but the controller will attempt to recover. (channel: <channel index>, Excessive transitions)`

The controller reset a disk channel to recover from a communication error. This event is logged to identify an error trend over time.

Recommended action:

- If the controller recovers, no action is required.
- View other logged events to determine other action to take.

62 - Spare disk failed

62.1

Warning

A spare disk drive failed. The disk was a dedicated spare for a disk group. (disk: channel: <channel index>, ID: <identifier>, SN: <serial number>, enclosure: <enclosure number>, slot: <slot number>) (disk group: <name>, SN: <serial number>)

Recommended action:

- Replace the disk with one of the same type (SSD, enterprise SAS, or midline SAS) and the same or greater capacity. For continued optimum I/O performance, the replacement disk should have performance that is the same as or better than the one it is replacing.
- configure the new disk as a dedicated spare for the same disk group.

62.2

Warning

A spare disk drive failed. The disk was a global spare. (disk: channel: <channel index>, ID: <identifier>, SN: <serial number>, enclosure: <enclosure number>, slot: <slot number>)

Recommended action:

- Replace the disk with one of the same type (SSD, enterprise SAS, or midline SAS) and the same or greater capacity. For continued optimum I/O performance, the replacement disk should have performance that is the same as or better than the one it is replacing.
- configure the new disk as a global spare.

65 - Uncorrectable ECC error

65.1

Error

An uncorrectable ECC error was detected in cache memory when booting up. (address: <numeric value>)

The controller is automatically restarted and its cache data is restored from the partner controller's cache.

Recommended action:

- Replace the controller module that logged this event.

68 - Controller shutdown

68.1

Info

The controller that logged this event has shut down; no restart

Recommended action:

- No action is required.

68.2

Info

The controller that logged this event has shut down; restarting

Recommended action:

- No action is required.

68.3

Info

Both controllers have shut down; no restart

Recommended action:

- No action is required.

68.4

Info

Both controllers have shut down; restarting

Recommended action:

- No action is required.

71 - Controller failover

71.1

Info

Failover was initiated. (failed or shutdown controller: B)

Recommended action:

- No action is required.

71.2

Info

Failover completed. (failed or shutdown controller: B)

Recommended action:

- No action is required.

71.3

Info

Failover was initiated. (failed or shutdown controller: A)

Recommended action:

- No action is required.

71.4

Info

```
Failover completed. (failed or shutdown controller: A)
```

Recommended action:

- No action is required.

72 - Controller failback

72.1

Info

```
Recovery was initiated for controller B.
```

Recommended action:

- No action is required.

72.2

Info

```
Shutdown was initiated for controller B.
```

Recommended action:

- No action is required.

72.3

Info

```
Recovery completed for controller B.
```

Recommended action:

- No action is required.

72.4

Info

```
Shutdown completed for controller B.
```

Recommended action:

- No action is required.

72.5

Info

```
Recovery was initiated for controller A.
```

Recommended action:

- No action is required.

72.6

Info

```
Shutdown was initiated for controller A.
```

Recommended action:

- No action is required.

72.7

Info

```
Recovery completed for controller A.
```

Recommended action:

- No action is required.

72.8

Info

```
Shutdown completed for controller A.
```

Recommended action:

- No action is required.

73 - Partner controller heartbeat

73.1

Info

```
Heartbeat was detected from the partner controller. This indicates that the partner controller
is operational.
```

None.

Recommended action:

- No action is required.

75 - LUN conflict detected

75.1

Info

```
A LUN was changed to 'undefined' due to a LUN conflict. (disk group: <name>, volume: <volume
name>, SN: <serial number>, original LUN: <logical unit number>)
```

The indicated volume's LUN has been unassigned because it conflicts with LUNs assigned to other volumes. This can happen when disks containing data for a mapped volume have been moved from one storage system to another.

Recommended action:

- If you want hosts to access the volume data in the inserted disks, map the volume with a different LUN.

76 - Booted with default configuration

76.1

Info

`The system booted up with default configuration settings.`

The controller is using default configuration settings. This event occurs on the first power up, and might occur after a firmware update.

Recommended action:

- If you have just performed a firmware update and your system requires special configuration settings, you must make those configuration changes before your system will operate as before.

77 - Cache initialized

77.1

Info

`Write-back cache was initialized for controller B. Write-back data was found.`

The cache was initialized as a result of power up or failover.

Recommended action:

- No action is required.

77.2

Info

`Write-back cache was initialized for controller B. Cache was clean.`

The cache was initialized as a result of power up or failover.

Recommended action:

- No action is required.

77.3

Info

`Write-back cache was initialized for controller A. Write-back data was found.`

The cache was initialized as a result of power up or failover.

Recommended action:

- No action is required.

77.4

Info

`Write-back cache was initialized for controller A. Cache was clean.`

The cache was initialized as a result of power up or failover.

Recommended action:

- No action is required.

78 - Spare disks unusable

78.1

Warning

```
All spare disk drives are unusable (too small) for a disk group. (disk group: <name>, SN:
<serial number>)
```

This occurs when a disk in a disk group fails and there is no dedicated spare available and all global spares are too small or, if the dynamic spares feature is enabled, all global spares and available disks are too small, or if there is no spare of the correct type. There may be more than one failed disk in the system.

Recommended action:

- Replace each failed disk with one of the same type (SSD, enterprise SAS, or midline SAS) and the same or greater capacity. For continued optimum I/O performance, the replacement disk should have performance that is the same as or better than the one it is replacing.
- Configure disks as dedicated spares or global spares.
  - For a dedicated spare, the disk must be of the same type as the other disks in the disk group and at least as large as the smallest-capacity disk in the disk group, and it should have the same or better performance.
  - For a global spare, it is best to choose a disk that is as big as or bigger than the largest disk of its type in the system and of equal or greater performance. If the system contains a mix of disk types (SSD, enterprise SAS, or midline SAS), there should be at least one global spare of each type (unless dedicated spares are used to protect every disk group of a given type).

78.2

Warning

```
All spare disk drives are unusable (too small) for a disk group. (disk group: <name>, SN:
<serial number>)
```

This occurs when a disk in a disk group fails and all global spares are too small or, if the dynamic spares feature is enabled, all global spares and available disks are too small, or if there is no spare of the correct type. There may be more than one failed disk in the system.

Recommended action:

- Replace each failed disk with one of the same type (SSD, enterprise SAS, or midline SAS) and the same or greater capacity. For continued optimum I/O performance, the replacement disk should have performance that is the same as or better than the one it is replacing.
- Configure disks as global spares.
- For a global spare, it is best to choose a disk that is as big as or bigger than the largest disk of its type in the system and of equal or greater performance. If the system contains a mix of disk types (SSD, enterprise SAS, or midline SAS), there should be at least one global spare of each type.

79 - Trust disk group completed

79.1

Info

A trust-disk-group job completed successfully. (disk group: <name>, SN: <serial number>)

None.

Recommended action:

- Be sure to complete the trust procedure as documented in the CLI help for the 'trust' command.

80 - Disk configuration changed

80.1

Info

The configuration of one or more disks was changed. (changed parameter: Write-back cache, new setting: enabled, number of disks changed: <count>, total number of disks: <count>)

Recommended action:

- No action is required.

80.2

Info

The configuration of one or more disks was changed. (changed parameter: SMART support, new setting: enabled, number of disks changed: <count>, total number of disks: <count>)

Recommended action:

- No action is required.

80.3

Info

The configuration of one or more disks was changed. (changed parameter: Read ahead, new setting: enabled, number of disks changed: <count>, total number of disks: <count>)

Recommended action:

- No action is required.

80.4

Info

The configuration of one or more disks was changed. (changed parameter: Initiator response timeout, new setting: enabled, number of disks changed: <count>, total number of disks: <count>)

Recommended action:

- No action is required.

80.5

Info

The configuration of one or more disks was changed. (changed parameter: Command aging limit, new setting: enabled, number of disks changed: <count>, total number of disks: <count>)

Recommended action:

- No action is required.

80.6

Info

The configuration of one or more disks was changed. (changed parameter: Unknown setting, new setting: enabled, number of disks changed: <count>, total number of disks: <count>)

Recommended action:

- No action is required.

80.7

Info

The configuration of one or more disks was changed. (changed parameter: Write-back cache, new setting: disabled, number of disks changed: <count>, total number of disks: <count>)

Recommended action:

- No action is required.

80.8

Info

The configuration of one or more disks was changed. (changed parameter: SMART support, new setting: disabled, number of disks changed: <count>, total number of disks: <count>)

Recommended action:

- No action is required.

80.9

Info

The configuration of one or more disks was changed. (changed parameter: Read ahead, new setting: disabled, number of disks changed: <count>, total number of disks: <count>)

Recommended action:

- No action is required.

80.10

Info

The configuration of one or more disks was changed. (changed parameter: Initiator response timeout, new setting: disabled, number of disks changed: <count>, total number of disks: <count>)

Recommended action:

- No action is required.

80.11

Info

The configuration of one or more disks was changed. (changed parameter: Command aging limit, new setting: disabled, number of disks changed: <count>, total number of disks: <count>)

Recommended action:

- No action is required.

80.12

Info

The configuration of one or more disks was changed. (changed parameter: Unknown setting, new setting: disabled, number of disks changed: <count>, total number of disks: <count>)

Recommended action:

- No action is required.

81 - Partner controller allowed to boot

81.1

Info

Kill was released (that is, the partner controller was allowed to boot up), user requested.

Recommended action:

- No action is required.

81.2

Info

Kill was released (that is, the partner controller was allowed to boot up), automatic.

Recommended action:

- No action is required.

81.3

Info

Kill was released (that is, the partner controller was allowed to boot up), internal.

Recommended action:

- No action is required.

81.4

Info

```
Kill was released (that is, the partner controller was allowed to boot up), partner controller
installed.
```

Recommended action:

- No action is required.

81.5

Info

```
Kill was released (that is, the partner controller was allowed to boot up), unknown reason.
```

Recommended action:

- No action is required.

83 - Partner controller changed state

83.1

Info

```
Partner controller changed state. (new state: <description>)
```

None.

Recommended action:

- No action is required.

84 - Other controller killed

84.1

Warning

```
Killed partner controller. (reason: <description>)
```

The controller that logged this event forced the partner controller to fail over.

Recommended action:

- Download the debug logs from your storage system and contact technical support. A service technician can use the debug logs to determine the problem.

86 - Channel parameters changed

86.1

Info

```
Host port parameters were changed.
```

Recommended action:

- No action is required.

86.2

Info

```
Disk channel parameters were changed.
```

Recommended action:

- No action is required.

87 - Configuration recovered

87.1

Warning

```
The mirrored configuration retrieved by this controller from the partner controller had a bad
CRC. The local flash configuration will be used instead.
```

None.

Recommended action:

- Restore the default configuration by using the 'restore defaults' command, as described in the CLI guide.

88 - Configuration recovered

88.1

Warning

```
The mirrored configuration retrieved by this controller from the partner controller was
corrupt. The local flash configuration will be used instead.
```

None.

Recommended action:

- Restore the default configuration by using the 'restore defaults' command, as described in the CLI guide.

89 - Configuration recovered

89.1

Warning

```
The mirrored configuration level is too high; the controller probably has down-level firmware.
The local flash configuration will be used instead.
```

The mirrored configuration retrieved by this controller from the partner controller has a configuration level that is too high for the firmware in this controller to process.

Recommended action:

- The controller that logged this event probably has down-level firmware. Update the firmware in the down-level controller. Both controllers should have the same firmware versions.

When the problem is resolved, event 20 is logged.

90 - Configuration recovered

90.1

Info

No mirrored configuration was available from the partner controller. The local flash configuration will be used instead.

This event is expected if the other controller is new or its configuration has been changed.

Recommended action:

- No action is required.

91 - Diagnostic failure

91.1

Error

The diagnostic test failed that tests the hardware reset signals between controllers.

In a testing environment, the diagnostic that checks hardware reset signals between controllers in Active-Active mode failed.

Recommended action:

- Perform failure analysis.

95 - Controller serial number conflict

95.1

Error

Both controllers have the same serial number.

Both controllers in an Active-Active configuration have the same serial number. Non-unique serial numbers can cause system problems. For example, WWNs are determined by serial number.

Recommended action:

- Remove one of the controller modules and insert a replacement, then return the removed module to be reprogrammed.

96 - Configuration changes ignored

96.1

Info

Some configuration changes were ignored because there may be customer data in write-back cache.

Pending configuration changes that take effect at startup were ignored because customer data might be present in cache.

Recommended action:

- If the requested configuration changes did not occur, make the changes again and then use a user-interface command to shut down the Storage Controller and then restart it.

103 - Volume name changed

103.1

Info

A volume name was changed. (old name: <name>, new name: <name>, SN: <serial number>)

Recommended action:

- No action is required.

104 - Volume geometry changed

104.1

Info

A volume size was changed. (pool: <pool name>, volume: <volume name>, SN: <serial number>)

None.

Recommended action:

- No action is required.

105 - Volume LUN changed

105.1

Info

The default LUN for a volume was changed. (pool: <pool name>, volume: <volume name>, SN: <serial number>) (new LUN: <logical unit number>)

None.

Recommended action:

- No action is required.

106 - Add volume completed

106.1

Info

A volume was added. (pool: <pool name>, volume: <volume name>, SN: <serial number>) (default LUN: <logical unit number>)

Recommended action:

- No action is required.

106.2

Info

A volume was added. (pool: <pool name>, volume: <volume name>, SN: <serial number>) (default LUN: none)

Recommended action:

- No action is required.

107 - Critical error

107.1

Error

`<detailed error information>`

A serious error has been detected by the controller. In a single-controller configuration, the controller will restart automatically. In an Active-Active configuration, the partner controller will kill the controller that experienced the error.

Recommended action:

- Download the debug logs from your storage system and contact technical support. A service technician can use the debug logs to determine the problem.

108 - Delete volume completed

108.1

Info

`A volume was deleted. (pool: <pool name>, volume: <volume name>, SN: <serial number>)`

None.

Recommended action:

- No action is required.

109 - Reset Volume stats

109.1

Info

`Volume statistics were reset for all volumes.`

Recommended action:

- No action is required.

109.2

Info

`Volume statistics were reset for one volume. (pool: <pool name>, volume: <volume name>, SN: <serial number>)`

Recommended action:

- No action is required.

110 - Set preferred owner

110.1
Info

Ownership of a disk group was given to the other controller. (disk group: <name>, SN: <serial
number>)

None.
Recommended action:

- No action is required.

111 - Host port link up

111.1
Info

Host link up. (port: <channel index>)

This event indicates that a problem reported by event 112 is resolved. For a system with FC ports, this event also appears after
loop initialization.
Recommended action:

- No action is required.

111.2
Info

Host link up. (port: <channel index>, speed: <link speed>)

This event indicates that a problem reported by event 112 is resolved. For a system with FC ports, this event also appears after
loop initialization.
Recommended action:

- No action is required.

111.3
Info

Host link up. (port: <channel index>, speed: <link speed>, number of loop ID(s): <count>,
controller could not acquire all its own loop ID(s), fabric)

This event indicates that a problem reported by event 112 is resolved. For a system with FC ports, this event also appears after
loop initialization.
Recommended action:

- No action is required.

111.4

Info

```
Host link up. (port: <channel index>, speed: <link speed>, number of loop ID(s): <count>,
controller could not acquire all its own loop ID(s), external device(s))
```

This event indicates that a problem reported by event 112 is resolved. For a system with FC ports, this event also appears after loop initialization.

Recommended action:

- No action is required.

111.5

Info

```
Host link up. (port: <channel index>, speed: <link speed>, number of loop ID(s): <count>,
controller could not acquire all its own loop ID(s))
```

This event indicates that a problem reported by event 112 is resolved. For a system with FC ports, this event also appears after loop initialization.

Recommended action:

- No action is required.

111.6

Info

```
Host link up. (port: <channel index>, speed: <link speed>, number of loop ID(s): <count>,
fabric)
```

This event indicates that a problem reported by event 112 is resolved. For a system with FC ports, this event also appears after loop initialization.

Recommended action:

- No action is required.

111.7

Info

```
Host link up. (port: <channel index>, speed: <link speed>, number of loop ID(s): <count>,
external device(s))
```

This event indicates that a problem reported by event 112 is resolved. For a system with FC ports, this event also appears after loop initialization.

Recommended action:

- No action is required.

111.8

Info

`Host link up. (port: <channel index>, speed: <link speed>, number of loop ID(s): <count>)`

This event indicates that a problem reported by event 112 is resolved. For a system with FC ports, this event also appears after loop initialization.

Recommended action:

- No action is required.

111.9

Info

`Host link up. (port: <channel index>, speed: <link speed>, point-to-point, fabric)`

This event indicates that a problem reported by event 112 is resolved. For a system with FC ports, this event also appears after loop initialization.

Recommended action:

- No action is required.

111.10

Info

`Host link up. (port: <channel index>, speed: <link speed>, point-to-point, external device(s))`

This event indicates that a problem reported by event 112 is resolved. For a system with FC ports, this event also appears after loop initialization.

Recommended action:

- No action is required.

111.11

Info

`Host link up. (port: <channel index>, speed: <link speed>, point-to-point)`

This event indicates that a problem reported by event 112 is resolved. For a system with FC ports, this event also appears after loop initialization.

Recommended action:

- No action is required.

112 - Host port link down

112.1

Warning

`Host link down. (port: <port number>)`

The link for the indicated host port has unexpectedly gone down. This can affect host mappings.

Recommended action:

- Look for corresponding event 111 and monitor excessive transitions. If this event occurs more than 8 times per hour, it should be investigated.
- This event is probably caused by equipment outside of the storage system, such as faulty cabling or a faulty switch.
- If the problem is not outside of the storage system, replace the controller module that logged this event.

112.2

Info

`Host link down. (port: <port number>)`

The link for the indicated host port has gone down because the controller is starting up.

Recommended action:

- No action is required.

114 - Disk channel link down

114.1

Info

`Disk link down. (channel: <channel index>)`

The link for the indicated disk channel is down. Note that events 114 and 211 are logged whenever a user-requested rescan occurs and do not indicate an error.

Recommended action:

- Look for corresponding event 211 and monitor excessive transitions indicating disk problems. If more than 8 transitions occur per hour, see "Resources for diagnosing and resolving problems" in the Event Descriptions Reference Guide.

116 - Reboot to avoid lost write back data

116.1

Error

`This controller restarted to avoid losing write-back data that is in the partner controller.`

After a recovery, the partner controller was killed while mirroring write-back data to the controller that logged this event. The controller that logged this event restarted to avoid losing the data in the partner controller's cache, but if the other controller does not restart successfully, the data will be lost.

Recommended action:

- To determine if data might have been lost, check whether this event was immediately followed by event 56 (Storage Controller booted up), closely followed by event 71 (failover started). The failover indicates that the restart did not succeed.

117 - Host port error

117.1

Warning

This controller detected an error on one of its host channels. (channel: <channel index>, error code: <error code>)

Recommended action:

- Restart the Storage Controller that logged this event.
- If more errors are detected, check the connectivity between the controller and the attached host.
- If more errors are generated, shut down the Storage Controller and replace the controller module.

117.2

Warning

This controller generated an error on one of its host channels. (channel: <channel index>, status: <numeric value>, <numeric value>)

Recommended action:

- Restart the Storage Controller that logged this event.
- If more errors are detected, check the connectivity between the controller and the attached host.
- If more errors are generated, shut down the Storage Controller and replace the controller module.

117.3

Warning

This controller generated an error on one of its host channels. (channel: <channel index>, sense data: <numeric value>, <numeric value>)

Recommended action:

- Restart the Storage Controller that logged this event.
- If more errors are detected, check the connectivity between the controller and the attached host.
- If more errors are generated, shut down the Storage Controller and replace the controller module.

118 - Volume cache parameters changed

118.1

Info

Cache parameters were changed for a volume. (pool: <pool name>, volume: <volume name>, SN: <serial number>) (cache optimization: <description>, read-ahead size: <description>, write-back cache: <on or off>)

None.

Recommended action:

- No action is required.

127 - Invalid dual port connection

127.1

Warning

```
An invalid disk-drive connection was detected. An expansion port is connected to a host port.
(channel: <channel index>)
```

None.

Recommended action:

- Disconnect the host port and expansion port from each other and connect them to the proper devices.

136 - Disk channel degraded

136.1

Warning

```
A disk channel went to a degraded state. (channel: <channel index>) (reason: excessive errors)
```

Errors detected on the indicated disk channel have caused the controller to mark the channel as degraded.

Recommended action:

- Determine the source of the errors on the indicated disk channel and replace the faulty hardware.

When the problem is resolved, event 189 is logged.

136.2

Warning

```
A disk channel went to a degraded state. (channel: <channel index>) (reason: excessive LIPs)
```

Errors detected on the indicated disk channel have caused the controller to mark the channel as degraded.

Recommended action:

- Determine the source of the errors on the indicated disk channel and replace the faulty hardware.

When the problem is resolved, event 189 is logged.

139 - Management Controller booted

139.1

Info

```
The Management Controller booted up. MC firmware version: <version string>
```

The Management Controller (MC) has powered up or restarted.

Recommended action:

- No action is required.

139.2

Info

The Management Controller booted up. MC firmware version: <version string> (baselevel: <version string>)

The Management Controller (MC) has powered up or restarted.

Recommended action:

• No action is required.

140 - Management Controller restarted

140.1

Info

The Management Controller is about to restart.

None.

Recommended action:

• No action is required.

141 - Management Controller IP addr changed

141.1

Info

The Management Controller IP address changed. (new IP address: <IP address>)

This event is logged when the IP address used for management of the system has been changed by a user or by a DHCP server (if DHCP is enabled). This event is also logged during power up or failover recovery, even when the address has not changed.

Recommended action:

• No action is required.

152 - Management Controller comm error

152.1

Warning

`The Storage Controller is not receiving data from the Management Controller. (This is normal during firmware update.)`

The Management Controller (MC) has not communicated with the Storage Controller (SC) for 15 minutes and may have failed.

This event is initially logged as Informational severity. If the problem persists, this event is logged a second time as Warning severity and the MC is automatically restarted in an attempt to recover from the problem. Event 156 is then logged.

Recommended action:

- If this event is logged only one time as Warning severity, no action is required.
- If this event is logged more than one time as Warning severity, do the following:
    - If you are now able to access the management interfaces of the controller that logged this event, do the following:
        - Check the version of the controller firmware and update to the latest firmware if needed.
        - If the latest firmware is already installed, the controller module that logged this event probably has a hardware fault. Replace the module.
    - If you are NOT able to access the management interfaces of the controller that logged this event, do the following:
        - Shut down that controller and reseat the module.
        - If you are then able to access the management interfaces, check the version of the controller firmware and update to the latest firmware if needed.
        - If the problem recurs, replace the module.

152.2

Info

`The Storage Controller is not receiving data from the Management Controller. (This is normal during firmware update.)`

The Management Controller (MC) has not communicated with the Storage Controller (SC) for 160 seconds.

If communication is restored in less than 15 minutes, event 153 is logged. If the problem persists, this event is logged a second time as Warning severity.

NOTE: It is normal for this event to be logged as Informational severity during firmware update.

Recommended action:

- Check the version of the controller firmware and update to the latest firmware if needed.
- If the latest firmware is already installed, no action is required.

153 - Management Controller comm resumed

153.1

Info

The Storage Controller resumed communications with the Management Controller.

None.

Recommended action:

- No action is required.

156 - Management Controller reset

156.1

Info

The Management Controller was restarted by a user.

None.

Recommended action:

- No action is required.

156.2

Warning

The Management Controller was restarted automatically by the Storage Controller for the purpose of error recovery.

None.

Recommended action:

- See the recommended actions for event 152, which is logged at approximately the same time.

157 - Flash chip write failure

157.1

Error

A failure was encountered trying to write to a flash chip.

A failure occurred when trying to write to the Storage Controller (SC) flash chip.

Recommended action:

- Replace the controller module that logged this event.

158 - Storage Controller ECC Error

158.1

Error

A correctable ECC error occurred in Storage Controller CPU memory. (<detailed error information>)

- A correctable ECC error occurred in CPU memory more than once during a 12-hour period, indicating a probable hardware fault.

Recommended action:

- Replace the controller module that logged this event.

158.2

Warning

A correctable ECC error occurred in Storage Controller CPU memory. (<detailed error information>)

- This event is logged with Warning severity to provide information that may be useful to technical support, but no action is required now. It will be logged with Error severity if it is necessary to replace the controller module.

Recommended action:

- No action is required.

161 - Enclosure Management Processor error

161.1

Info

One or more enclosures do not have a valid path to an Enclosure Management Processor.

All enclosure EMPs are disabled.

Recommended action:

- Download the debug logs from your storage system and contact technical support. A service technician can use the debug logs to determine the problem.

162 - Previous WWN unknown

162.1

Warning

`The previous WWN of this controller is unknown.`

The host WWNs (node and port) previously presented by this controller module are unknown. In a dual-controller system this event has two possible causes:

- One or both controller modules have been replaced or moved while the system was powered off.
- One or both controller modules have had their flash configuration cleared (this is where the previously used WWNs are stored).

The controller module recovers from this situation by generating a WWN based on its own serial number.

Recommended action:

- If the controller module was replaced or someone reprogrammed its FRU ID data, verify the WWN information for this controller module on all hosts that access it.

163 - Previous WWN unknown

163.1

Warning

`The previous WWN of the partner controller is unknown.`

The host WWNs (node and port) previously presented by the partner controller module, which is currently offline, are unknown.

This event has two possible causes:

- The online controller module reporting the event was replaced or moved while the system was powered off.
- The online controller module had its flash configuration (where previously used WWNs are stored) cleared.

The online controller module recovers from this situation by generating a WWN based on its own serial number for the other controller module.

Recommended action:

- If the controller module was replaced or someone reprogrammed its FRU ID data, verify the WWN information for the other controller module on all hosts that access it.

166 - RAID metadata mismatch

166.1

Warning

`The RAID metadata level of the two controllers does not match. Make sure both controllers have the same firmware version.`

Usually, the controller at the higher firmware level can read metadata written by a controller at a lower firmware level. The reverse is typically not true. Therefore, if the controller at the higher firmware level failed, the surviving controller at the lower firmware level cannot read the metadata in disks that have failed over.

Recommended action:

- If this occurs after a firmware update, it indicates that the metadata format changed, which is rare. Update the controller with the lower firmware level to match the firmware level in the other controller.

167 - Diagnostic test warning

167.1

Warning

`A warning condition occurred during boot-up diagnostics.`

A diagnostic test at controller bootup detected an abnormal operation, which might require a power cycle to correct.

Recommended action:

- Download the debug logs from your storage system and contact technical support. A service technician can use the debug logs to determine the problem.

172 - Disk group quarantined

172.1

Warning

`A disk group was quarantined. (disk group: <name>, SN: <serial number>)`

The indicated disk group has been quarantined because not all of its disks are accessible. While the disk group is quarantined, in linear storage any attempt to access its volumes from a host will fail. In virtual storage, all volumes in the pool will be forced read-only. If all of the disks become accessible, the disk group will be dequarantined automatically with a resulting status of FTOL. If not all of the disks become accessible but enough become accessible to allow reading from and writing to the disk group, it will be dequarantined automatically with a resulting status of FTDN or CRIT. If a spare disk is available, reconstruction will begin automatically. When the disk group has been removed from quarantine, event 173 is logged. For a more detailed discussion of dequarantine, see the WBI or CLI documentation.

Caution: Avoid using the manual dequarantine operation as a recovery method when event 172 is logged because this causes data recovery to be more difficult or impossible.

Caution: If you clear unwritten cache data while a disk group is quarantined or offline, that data will be permanently lost.

Recommended action:

- If event 173 has subsequently been logged for the indicated disk group, no action is required. The disk group has already been removed from quarantine.
- Otherwise, perform the following actions:
  - Check that all enclosures are powered on.
  - Check that all disks and I/O modules in every enclosure are fully seated in their slots and that their latches are locked.
  - Reseat any disks in the quarantined disk group that are reported as missing or failed in the user interface. (Do NOT remove and reinsert disks that are not members of the disk group that is quarantined.)
  - Check that the SAS expansion cables are connected between each enclosure in the storage system and that they are fully seated. (Do NOT remove and reinsert the cables because this can cause problems with additional disk groups.)
  - Check that no disks have been removed from the system unintentionally.
  - Check for other events that indicate faults in the system and follow the recommended actions for those events. But, if the event indicates a failed disk and the recommended action is to replace the disk, do NOT replace the disk at this time because it may be needed later for data recovery.
  - If the disk group is still quarantined after performing the above steps, shut down both controllers and then power down the entire storage system. Power it back up, beginning with any disk enclosures (expansion enclosures), then the controller enclosure.
  - If the disk group is still quarantined after performing the above steps, contact technical support.

172.2

Warning

`A disk group was quarantined. (disk group SN: <serial number>)`

The indicated disk group has been quarantined because not all of its disks are accessible. While the disk group is quarantined, in linear storage any attempt to access its volumes from a host will fail. In virtual storage, all volumes in the pool will be forced read-only. If all of the disks become accessible, the disk group will be dequarantined automatically with a resulting status of FTOL. If not all of the disks become accessible but enough become accessible to allow reading from and writing to the disk group, it will be dequarantined automatically with a resulting status of FTDN or CRIT. If a spare disk is available, reconstruction will begin automatically. When the disk group has been removed from quarantine, event 173 is logged. For a more detailed discussion of dequarantine, see the WBI or CLI documentation.

Caution: Avoid using the manual dequarantine operation as a recovery method when event 172 is logged because this causes data recovery to be more difficult or impossible.

Caution: If you clear unwritten cache data while a disk group is quarantined or offline, that data will be permanently lost.

Recommended action:

- If event 173 has subsequently been logged for the indicated disk group, no action is required. The disk group has already been removed from quarantine.
- Otherwise, perform the following actions:
    - Check that all enclosures are powered on.
    - Check that all disks and I/O modules in every enclosure are fully seated in their slots and that their latches are locked.
    - Reseat any disks in the quarantined disk group that are reported as missing or failed in the user interface. (Do NOT remove and reinsert disks that are not members of the disk group that is quarantined.)
    - Check that the SAS expansion cables are connected between each enclosure in the storage system and that they are fully seated. (Do NOT remove and reinsert the cables because this can cause problems with additional disk groups.)
    - Check that no disks have been removed from the system unintentionally.
    - Check for other events that indicate faults in the system and follow the recommended actions for those events. But, if the event indicates a failed disk and the recommended action is to replace the disk, do NOT replace the disk at this time because it may be needed later for data recovery.
    - If the disk group is still quarantined after performing the above steps, shut down both controllers and then power down the entire storage system. Power it back up, beginning with any disk enclosures (expansion enclosures), then the controller enclosure.
    - If the disk group is still quarantined after performing the above steps, contact technical support.

172.3

Warning

`A disk group was quarantined because it contains data in a format that is not supported by this system. (disk group: <name>, SN: <serial number>)`

This controller does not support linear disk groups.

Recommended action:

- Recover full support and manageability of the quarantined disk groups and volumes by replacing your controllers with controllers that support this type of disk group.
- If you are sure that the data on this disk group is not needed, simply delete the disk group, and thus the volumes, using the currently installed controllers.

172.4

Warning

`A disk group was quarantined because it contains data in a format that is not supported by this system. (disk group SN: <serial number>)`

This controller does not support linear disk groups.

Recommended action:

- Recover full support and manageability of the quarantined disk groups and volumes by replacing your controllers with controllers that support this type of disk group.
- If you are sure that the data on this disk group is not needed, simply delete the disk group, and thus the volumes, using the currently installed controllers.

172.5

Warning

`A disk group was quarantined. (SN: <serial number>, disk group: <name>)`

The indicated disk group has been quarantined because not all of its disks are accessible. While the disk group is quarantined, in virtual storage, all volumes in the pool will be forced read-only. If all of the disks become accessible, the disk group will be dequarantined automatically with a resulting status of FTOL. If not all of the disks become accessible but enough become accessible to allow reading from and writing to the disk group, it will be dequarantined automatically with a resulting status of FTDN or CRIT. If a spare disk is available, reconstruction will begin automatically. When the disk group has been removed from quarantine, event 173 is logged. For a more detailed discussion of dequarantine, see the WBI or CLI documentation.

Caution: Avoid using the manual dequarantine operation as a recovery method when event 172 is logged because this causes data recovery to be more difficult or impossible.

Caution: If you clear unwritten cache data while a disk group is quarantined or offline, that data will be permanently lost.

Recommended action:

- If event 173 has subsequently been logged for the indicated disk group, no action is required. The disk group has already been removed from quarantine.
- Otherwise, perform the following actions:
  - Check that all enclosures are powered on.
  - Check that all disks and I/O modules in every enclosure are fully seated in their slots and that their latches are locked.
  - Reseat any disks in the quarantined disk group that are reported as missing or failed in the user interface. (Do NOT remove and reinsert disks that are not members of the disk group that is quarantined.)
  - Check that the SAS expansion cables are connected between each enclosure in the storage system and that they are fully seated. (Do NOT remove and reinsert the cables because this can cause problems with additional disk groups.)
  - Check that no disks have been removed from the system unintentionally.
  - Check for other events that indicate faults in the system and follow the recommended actions for those events. But, if the event indicates a failed disk and the recommended action is to replace the disk, do NOT replace the disk at this time because it may be needed later for data recovery.
  - If the disk group is still quarantined after performing the above steps, shut down both controllers and then power down the entire storage system. Power it back up, beginning with any disk enclosures (expansion enclosures), then the controller enclosure.
  - If the disk group is still quarantined after performing the above steps, contact technical support.

172.6

Warning

`A disk group was quarantined. (disk group SN: <serial number>)`

The indicated disk group has been quarantined because not all of its disks are accessible. While the disk group is quarantined, in virtual storage, all volumes in the pool will be forced read-only. If all of the disks become accessible, the disk group will be dequarantined automatically with a resulting status of FTOL. If not all of the disks become accessible but enough become accessible to allow reading from and writing to the disk group, it will be dequarantined automatically with a resulting status of FTDN or CRIT. If a spare disk is available, reconstruction will begin automatically. When the disk group has been removed from quarantine, event 173 is logged. For a more detailed discussion of dequarantine, see the WBI or CLI documentation.

Caution: Avoid using the manual dequarantine operation as a recovery method when event 172 is logged because this causes data recovery to be more difficult or impossible.

Caution: If you clear unwritten cache data while a disk group is quarantined or offline, that data will be permanently lost.

Recommended action:

- If event 173 has subsequently been logged for the indicated disk group, no action is required. The disk group has already been removed from quarantine.
- Otherwise, perform the following actions:
  - Check that all enclosures are powered on.
  - Check that all disks and I/O modules in every enclosure are fully seated in their slots and that their latches are locked.
  - Reseat any disks in the quarantined disk group that are reported as missing or failed in the user interface. (Do NOT remove and reinsert disks that are not members of the disk group that is quarantined.)
  - Check that the SAS expansion cables are connected between each enclosure in the storage system and that they are fully seated. (Do NOT remove and reinsert the cables because this can cause problems with additional disk groups.)
  - Check that no disks have been removed from the system unintentionally.
  - Check for other events that indicate faults in the system and follow the recommended actions for those events. But, if the event indicates a failed disk and the recommended action is to replace the disk, do NOT replace the disk at this time because it may be needed later for data recovery.
  - If the disk group is still quarantined after performing the above steps, shut down both controllers and then power down the entire storage system. Power it back up, beginning with any disk enclosures (expansion enclosures), then the controller enclosure.
  - If the disk group is still quarantined after performing the above steps, contact technical support.

173 - Disk group dequarantined

173.1

Info

`A disk group was dequarantined. (disk group: <name>, SN: <serial number>) (disk group status: <description>, mode: <description>)`

The indicated disk group has been removed from quarantine.

Recommended action:

- No action is required.

173.2

Info

```
A disk group was dequarantined. (disk group SN: <serial number>) (disk group status:
<description>, mode: <description>)
```

The indicated disk group has been removed from quarantine.

Recommended action:

- No action is required.

174 - Enclosure Management Processor updated

174.1

Info

```
Enclosure management processor (EMP) firmware was installed successfully. (enclosure:
<enclosure number>, module: A)
```

If the firmware update fails, the user will be notified about the problem immediately and should take care of the problem at that time, so even when there is a failure, this event is logged as Informational severity.

Recommended action:

- No action is required.

174.2

Info

```
Enclosure management processor (EMP) firmware was installed successfully. (enclosure:
<enclosure number>, module: B)
```

If the firmware update fails, the user will be notified about the problem immediately and should take care of the problem at that time, so even when there is a failure, this event is logged as Informational severity.

Recommended action:

- No action is required.

174.3

Info

```
EMP firmware update failed. (enclosure: <enclosure number>, module: A, status: <numeric
value>)
```

If the firmware update fails, the user will be notified about the problem immediately and should take care of the problem at that time, so even when there is a failure, this event is logged as Informational severity.

Recommended action:

- No action is required.

174.4

Info

`EMP firmware update failed. (enclosure: <enclosure number>, module: B, status: <numeric value>)`

If the firmware update fails, the user will be notified about the problem immediately and should take care of the problem at that time, so even when there is a failure, this event is logged as Informational severity.

Recommended action:

- No action is required.

174.5

Info

`Disk firmware was installed successfully. (enclosure: <enclosure number>, slot: <slot number>)`

If the firmware update fails, the user will be notified about the problem immediately and should take care of the problem at that time, so even when there is a failure, this event is logged as Informational severity.

Recommended action:

- No action is required.

174.6

Info

`Disk firmware update failed. (enclosure: <enclosure number>, slot: <slot number>, status: <numeric value>)`

If the firmware update fails, the user will be notified about the problem immediately and should take care of the problem at that time, so even when there is a failure, this event is logged as Informational severity.

Recommended action:

- No action is required.

174.7

Info

`Firmware was installed successfully.`

If the firmware update fails, the user will be notified about the problem immediately and should take care of the problem at that time, so even when there is a failure, this event is logged as Informational severity.

Recommended action:

- No action is required.

175 - Ethernet link change

175.1

Info

The network-port Ethernet link is down for controller <name>.

Recommended action:

- If this event is logged indicating the network port is up shortly after the Management Controller (MC) has booted up (event 139), no action is required.
- Otherwise, monitor occurrences of this event for an error trend. If this event occurs more than 8 times per hour, it should be investigated.
  - This event is probably caused by equipment outside of the storage system, such as faulty cabling or a faulty Ethernet switch.
  - If this event is being logged by only one controller in a dual-controller system, swap the network-port Ethernet cables between the two controllers. This will show whether the problem is outside or inside the storage system.
  - If the problem is not outside of the storage system, replace the controller module that logged this event.

175.2

Info

The network-port Ethernet link is up for controller <name>.

Recommended action:

- If this event is logged indicating the network port is up shortly after the Management Controller (MC) has booted up (event 139), no action is required.
- Otherwise, monitor occurrences of this event for an error trend. If this event occurs more than 8 times per hour, it should be investigated.
  - This event is probably caused by equipment outside of the storage system, such as faulty cabling or a faulty Ethernet switch.
  - If this event is being logged by only one controller in a dual-controller system, swap the network-port Ethernet cables between the two controllers. This will show whether the problem is outside or inside the storage system.
  - If the problem is not outside of the storage system, replace the controller module that logged this event.

176 - Disk error statistics reset

176.1

Info

The disk error statistics were reset for all disks.

Recommended action:

- No action is required.

176.2

Info

`The disk error statistics were reset for one disk. (disk: SN: <serial number>, enclosure: <enclosure number>, slot: <slot number>)`

Recommended action:

- No action is required.

177 - Cache memory freed

177.1

Info

`Cache memory used for write data was freed for a volume. (pool: <pool name>, volume: <volume name>, SN: <serial number>)`

Cache data was purged for the indicated missing volume.

Recommended action:

- No action is required.

181 - Management controller parameters set

181.1

Info

`Management Controller configuration parameters were set.`

One or more configuration parameters associated with the Management Controller (MC) have been changed, such as configuration for SNMP, email notification, and system strings (system name, system location, etc.).

Recommended action:

- No action is required.

182 - Disk channels paused

182.1

Info

`Disk channels were paused. (pause type: Suspend disk I/O)`

All disk channels have been paused. I/O will not be performed on the disks until all channels are unpaused.

Recommended action:

- If this event occurs in relation to disk firmware update, no action is required. When the condition is cleared, event 183 is logged.
- If this event occurs and you are not performing disk firmware update, see "Resources for diagnosing and resolving problems" in the Event Descriptions Reference Guide.

182.2

Info

`Disk channels were paused. (pause type: Hide all disks)`

All disk channels have been paused. I/O will not be performed on the disks until all channels are unpaused.

Recommended action:

- If this event occurs in relation to disk firmware update, no action is required. When the condition is cleared, event 183 is logged.
- If this event occurs and you are not performing disk firmware update, see "Resources for diagnosing and resolving problems" in the Event Descriptions Reference Guide.

182.3

Info

`Disk channels were paused. (pause type: Locked disks)`

All disk channels have been paused. I/O will not be performed on the disks until all channels are unpaused.

Recommended action:

- If this event occurs in relation to disk firmware update, no action is required. When the condition is cleared, event 183 is logged.
- If this event occurs and you are not performing disk firmware update, see "Resources for diagnosing and resolving problems" in the Event Descriptions Reference Guide.

182.4

Info

`Disk channels were paused. (pause type: <name>)`

All disk channels have been paused. I/O will not be performed on the disks until all channels are unpaused.

Recommended action:

- If this event occurs in relation to disk firmware update, no action is required. When the condition is cleared, event 183 is logged.
- If this event occurs and you are not performing disk firmware update, see "Resources for diagnosing and resolving problems" in the Event Descriptions Reference Guide.

183 - Disk channels unpaused

183.1

Info

`Disk channels were unpaused.`

All disk channels have been unpaused, meaning that I/O can resume. An unpause initiates a rescan, which when complete is logged as event 19.

This event indicates that the pause reported by event 182 has ended.

Recommended action:

- No action is required.

185 - Enclosure Management Processor command

185.1

Info

A command was sent to an Enclosure Management Processor. (EMP SN: <serial number>, index: <numeric value>, command: <numeric value>, length: <numeric value>)

Recommended action:

- No action is required.

185.2

Info

A command was sent to an Enclosure Management Processor. (EMP SN: Unknown SN, index: <numeric value>, command: <numeric value>, length: <numeric value>)

Recommended action:

- No action is required.

186 - Enclosure parameters changed

186.1

Info

Enclosure parameters were changed by a user. (enclosure: <enclosure number>, enclosure WWN: <World Wide Name>, name: <name>, location: <numeric value>, rack number: <numeric value>, rack position: <numeric value>)

Recommended action:

- No action is required.

186.2

Info

Enclosure parameters were changed by a user. (enclosure: unknown, enclosure WWN: <World Wide Name>, name: <name>, location: <numeric value>, rack number: <numeric value>, rack position: <numeric value>)

Recommended action:

- No action is required.

187 - Write-back cache enabled

187.1

Info

Write-back cache was enabled.

Event 188 is the corresponding event that is logged when write-back cache is disabled.

Recommended action:

- No action is required.

188 - Write-back cache disable

188.1

Info

```
Write-back cache was disabled.
```

Event 187 is the corresponding event that is logged when write-back cache is enabled.

Recommended action:

- No action is required.

189 - Disk channel healthy

189.1

Info

```
A disk channel link that was previously degraded or failed is now healthy. (channel: <channel
index>)
```

None.

Recommended action:

- No action is required.

190 - AWT supercapacitor failure

190.1

Info

```
Auto-write-through trigger event: supercapacitor charging.
```

This change met a condition to trigger the auto-write-through feature, which has disabled write-back cache and put the system in write-through mode. When the fault is resolved, event 191 is logged to indicate that write-back mode has been restored.

Recommended action:

- If event 191 is not logged within 5 minutes after this event, the supercapacitor has probably failed and the controller module should be replaced.

191 - AWT supercapacitor good

191.1

Info

```
Auto-write-through trigger event: supercapacitor good.
```

The auto-write-through trigger event that caused event 190 to be logged has been resolved.

Recommended action:

- No action is required.

192 - AWT over temperature

192.1

Info

`Auto-write-through trigger event: over-temperature.`

This change met a condition to trigger the auto-write-through feature, which has disabled write-back cache and put the system in write-through mode. When the fault is resolved, event 193 is logged to indicate that write-back mode has been restored.

Recommended action:

* If event 193 has not been logged since this event was logged, the over-temperature condition probably still exists and should be investigated. Another over-temperature event was probably logged at approximately the same time as this event (such as event 39, 40, 553, 307, 469, 476, or 477). See the recommended actions for that event.

193 - AWT temperature good

193.1

Info

`Auto-write-through trigger event: temperature recovered.`

The auto-write-through trigger event that caused event 192 to be logged has been resolved.

Recommended action:

* No action is required.

194 - AWT partner down

194.1

Info

`Auto-write-through trigger event: partner processor down.`

This indicates that a trigger condition has occurred that has caused the auto-write-through feature to disable write-back cache and put the system in write-through mode. When the fault is resolved, event 195 is logged to indicate that write-back mode has been restored.

Recommended action:

* If event 195 has not been logged since this event was logged, the other Storage Controller is probably still down and the cause should be investigated. Other events were probably logged at approximately the same time as this event. See the recommended actions for those events.

195 - AWT partner good

195.1

Info

`Auto-write-through trigger event: partner processor recovered.`

The auto-write-through trigger event that caused event 194 to be logged has been resolved.

Recommended action:

* No action is required.

198 - AWT PSU failure

198.1

Info

`Auto-write-through trigger event: power supply failed.`

This indicates that a trigger condition has occurred that has caused the auto-write-through feature to disable write-back cache and put the system in write-through mode. When the fault is resolved, event 199 is logged to indicate that write-back mode has been restored.

Recommended action:

- If event 199 has not been logged since this event was logged, the power supply probably does not have a health of OK and the cause should be investigated. Another power-supply event was probably logged at approximately the same time as this event (such as event 551). See the recommended actions for that event.

199 - AWT PSU good

199.1

Info

`Auto-write-through trigger event: power supply recovered.`

The auto-write-through trigger event that caused event 198 to be logged has been resolved.

Recommended action:

- No action is required.

200 - AWT fan failure

200.1

Info

`Auto-write-through trigger event: fan failed.`

This indicates that a trigger condition has occurred that has caused the auto-write-through feature to disable write-back cache and put the system in write-through mode. When the fault is resolved, event 201 is logged to indicate that write-back mode has been restored.

Recommended action:

- If event 201 has not been logged since this event was logged, the fan probably does not have a health of OK and the cause should be investigated. Another fan event was probably logged at approximately the same time as this event (such as event 552). See the recommended actions for that event.

201 - AWT fan good

201.1

Info

`Auto-write-through trigger event: fan recovered.`

The auto-write-through trigger event that caused event 200 to be logged has been resolved.

Recommended action:

- No action is required.

202 - AWT cache enabled

202.1

Info

`Auto-write-through: Write-Back cache was re-enabled.`

An auto-write-through trigger condition has been cleared, causing write-back cache to be re-enabled. The environmental change is also logged at approximately the same time as this event (event 191, 193, 195, 199, 201, or 241).

Recommended action:

- No action is required.

203 - User disable write-back cache disabled

203.1

Warning

`Auto-write-through: Write-Back cache may be enabled,` but is not enabled by the user.

An environmental change occurred that allows write-back cache to be enabled, but the auto-write-back preference is not set. The environmental change is also logged at approximately the same time as this event (event 191, 193, 195, 199, 201, or 241).

Recommended action:

- Manually enable write-back cache.

204 - NV device notice

204.1

Info

`The system has come up normally and the NV device is in a normal expected state. (p1: <numeric value>, p2: <numeric value>, p3: <numeric value>, p4: <numeric value>)`

This event will be logged as an Error or Warning event if any user action is required.

Recommended action:

- No action is required.

204.2

Warning

`The system has started and found an issue with the NV device. The system will attempt to recover itself. (p1: <numeric value>, p2: <numeric value>, p3: <numeric value>, p4: <numeric value>).`

The memory card is used for backing up unwritten cache data when a controller goes down unexpectedly, such as when a power failure occurs. This event is generated when the Storage Controller (SC) detects a problem with the memory card as it is booting up

Recommended action:

- Restart the Storage Controller that logged this event.
- If this event is logged again, shut down the Storage Controller and replace the controller module.

204.3

Error

An Error occurred with either the NV device itself or the transport mechanism. The system may attempt to recover itself. (p1: <numeric value>, p2: <numeric value>, p3: <numeric value>, p4: <numeric value>)

The memory card is used for backing up unwritten cache data when a controller goes down unexpectedly, such as when a power failure occurs. This event is generated when the Storage Controller (SC) detects a problem with the memory card as it is booting up

Recommended action:

- Restart the Storage Controller that logged this event.
- If this event is logged again, shut down the Storage Controller and replace the controller module.

205 - Volume mapped/unmapped

205.1

Info

A mapping or masking operation for a volume was performed. (pool: <name>, volume: <volume name>, SN: <serial number>) (access: read-only, LUN: <logical unit number>)

Recommended action:

- No action is required.

205.2

Info

A mapping or masking operation for a volume was performed. (pool: <name>, volume: <volume name>, SN: <serial number>) (access: read-write, LUN: <logical unit number>)

Recommended action:

- No action is required.

205.3

Info

A mapping or masking operation for a volume was performed. (pool: <name>, volume: <volume name>, SN: <serial number>) (access: no-access)

Recommended action:

- No action is required.

206 - Scrub disk group started

206.1

Info

`A scrub-disk-group job was started. (disk group: <name>, SN: <serial number>)`

The scrub checks disks in the disk group for the following types of errors:

- Data parity errors for a RAID 5, RAID 6, or ADAPT ...disk group.
- Mirror verify errors for a RAID 1 or RAID 10 disk group.
- Media errors for all RAID levels including RAID 0 and non-RAID disk groups.

When errors are detected, they are automatically corrected for all RAID levels except RAID 0 and non-RAID disk groups.

When the scrub is complete, event 207 is logged.

Recommended action:

- No action is required.

207 - Scrub disk group completed

207.1

Error

`A scrub-disk-group job was aborted by a user. (number of parity or mirror mismatches found: <numeric value>, number of media errors found: <numeric value>) (disk group: <name>, SN: <serial number>)`

This event is logged as Error severity when more than 100 parity or mirror mismatches are found and corrected during a scrub or when 1 to 99 parity or mirror mismatches are found and corrected during each of 10 separate scrubs of the same disk group.

For non-fault-tolerant RAID levels (RAID 0 and non-RAID), media errors may indicate loss of data.

Recommended action:

- Resolve any non-disk hardware problems, such as a cooling problem or a faulty controller module, expansion module, or power supply.
- Check whether any disks in the disk group have logged SMART events or unrecoverable read errors.
    - If so, and the disk group is a non-fault-tolerant RAID level (RAID 0 or non-RAID), copy the data to a different disk group and replace the faulty disks.
    - If so, and the disk group is a fault-tolerant RAID level, check the current state of the disk group. If it is not FTOL then back up the data as data may be at risk. If it is FTOL then replace the indicated disk. If more than one disk in the same disk group has logged a SMART event, back up the data and replace each disk one at a time. In virtual storage it may be possible to remove the affected disk group, which will drain its data to another disk group, and then re-add the disk group.

207.2

Warning

`A scrub-disk-group job was aborted by a user. (number of parity or mirror mismatches found: <numeric value>, number of media errors found: <numeric value>) (disk group: <name>, SN: <serial number>)`

If a disk fails, data may be at risk.

Recommended action:

- Resolve any non-disk hardware problems, such as a cooling problem or a faulty controller module, expansion module, or power supply.
- Check whether any disks in the disk group have logged SMART events or unrecoverable read errors.
  - If so, and the disk group is a non-fault-tolerant RAID level (RAID 0 or non-RAID), copy the data to a different disk group and replace the faulty disks.
  - If so, and the disk group is a fault-tolerant RAID level, check the current state of the disk group. If it is not FTOL then back up the data as data may be at risk. If it is FTOL then replace the indicated disk. If more than one disk in the same disk group has logged a SMART event, back up the data and replace each disk one at a time. In virtual storage it may be possible to remove the affected disk group, which will drain its data to another disk group, and then re-add the disk group.

207.3

Info

`A scrub-disk-group job was aborted by a user. (number of parity or mirror mismatches found: <numeric value>, number of media errors found: <numeric value>) (disk group: <name>, SN: <serial number>)`

This event is logged as Informational severity when fewer than 100 parity or mirror mismatches are found and corrected during a scrub.

For non-fault-tolerant RAID levels (RAID 0 and non-RAID), media errors may indicate loss of data.

Recommended action:

- No action is required.

207.4

Error

`A scrub-disk-group job was aborted because of an internally detected condition such as a failed disk. (number of parity or mirror mismatches found: <numeric value>, number of media errors found: <numeric value>) (disk group: <name>, SN: <serial number>)`

This event is logged as Error severity when more than 100 parity or mirror mismatches are found and corrected during a scrub or when 1 to 99 parity or mirror mismatches are found and corrected during each of 10 separate scrubs of the same disk group.

For non-fault-tolerant RAID levels (RAID 0 and non-RAID), media errors may indicate loss of data.

Recommended action:

- Resolve any non-disk hardware problems, such as a cooling problem or a faulty controller module, expansion module, or power supply.
- Check whether any disks in the disk group have logged SMART events or unrecoverable read errors.
    - If so, and the disk group is a non-fault-tolerant RAID level (RAID 0 or non-RAID), copy the data to a different disk group and replace the faulty disks.
    - If so, and the disk group is a fault-tolerant RAID level, check the current state of the disk group. If it is not FTOL then back up the data as data may be at risk. If it is FTOL then replace the indicated disk. If more than one disk in the same disk group has logged a SMART event, back up the data and replace each disk one at a time. In virtual storage it may be possible to remove the affected disk group, which will drain its data to another disk group, and then re-add the disk group.

207.5

Warning

`A scrub-disk-group job was aborted because of an internally detected condition such as a failed disk. (number of parity or mirror mismatches found: <numeric value>, number of media errors found: <numeric value>) (disk group: <name>, SN: <serial number>)`

If a disk fails, data may be at risk.

Recommended action:

- Resolve any non-disk hardware problems, such as a cooling problem or a faulty controller module, expansion module, or power supply.
- Check whether any disks in the disk group have logged SMART events or unrecoverable read errors.
    - If so, and the disk group is a non-fault-tolerant RAID level (RAID 0 or non-RAID), copy the data to a different disk group and replace the faulty disks.
    - If so, and the disk group is a fault-tolerant RAID level, check the current state of the disk group. If it is not FTOL then back up the data as data may be at risk. If it is FTOL then replace the indicated disk. If more than one disk in the same disk group has logged a SMART event, back up the data and replace each disk one at a time. In virtual storage it may be possible to remove the affected disk group, which will drain its data to another disk group, and then re-add the disk group.

207.6

Info

```
A scrub-disk-group job was aborted because of an internally detected condition such as a failed
disk. (number of parity or mirror mismatches found: <numeric value>, number of media errors
found: <numeric value>) (disk group: <name>, SN: <serial number>)
```

This event is logged as Informational severity when fewer than 100 parity or mirror mismatches are found and corrected during a scrub.

For non-fault-tolerant RAID levels (RAID 0 and non-RAID), media errors may indicate loss of data.

Recommended action:

- No action is required.

207.7

Error

```
A scrub-disk-group job failed. <detailed error information> (error code: <error code>) (number
of parity or mirror mismatches found: <numeric value>, number of media errors found: <numeric
value>) (disk group: <name>, SN: <serial number>)
```

This event is logged as Error severity when more than 100 parity or mirror mismatches are found and corrected during a scrub or when 1 to 99 parity or mirror mismatches are found and corrected during each of 10 separate scrubs of the same disk group.

For non-fault-tolerant RAID levels (RAID 0 and non-RAID), media errors may indicate loss of data.

Recommended action:

- Resolve any non-disk hardware problems, such as a cooling problem or a faulty controller module, expansion module, or power supply.
- Check whether any disks in the disk group have logged SMART events or unrecoverable read errors.
  - If so, and the disk group is a non-fault-tolerant RAID level (RAID 0 or non-RAID), copy the data to a different disk group and replace the faulty disks.
  - If so, and the disk group is a fault-tolerant RAID level, check the current state of the disk group. If it is not FTOL then back up the data as data may be at risk. If it is FTOL then replace the indicated disk. If more than one disk in the same disk group has logged a SMART event, back up the data and replace each disk one at a time. In virtual storage it may be possible to remove the affected disk group, which will drain its data to another disk group, and then re-add the disk group.

207.8

Warning

`A scrub-disk-group job failed. <detailed error information> (error code: <error code>) (number of parity or mirror mismatches found: <numeric value>, number of media errors found: <numeric value>) (disk group: <name>, SN: <serial number>)`

If a disk fails, data may be at risk.

Recommended action:

- Resolve any non-disk hardware problems, such as a cooling problem or a faulty controller module, expansion module, or power supply.
- Check whether any disks in the disk group have logged SMART events or unrecoverable read errors.
    - If so, and the disk group is a non-fault-tolerant RAID level (RAID 0 or non-RAID), copy the data to a different disk group and replace the faulty disks.
    - If so, and the disk group is a fault-tolerant RAID level, check the current state of the disk group. If it is not FTOL then back up the data as data may be at risk. If it is FTOL then replace the indicated disk. If more than one disk in the same disk group has logged a SMART event, back up the data and replace each disk one at a time. In virtual storage it may be possible to remove the affected disk group, which will drain its data to another disk group, and then re-add the disk group.

207.9

Info

`A scrub-disk-group job failed. <detailed error information> (error code: <error code>) (number of parity or mirror mismatches found: <numeric value>, number of media errors found: <numeric value>) (disk group: <name>, SN: <serial number>)`

This event is logged as Informational severity when fewer than 100 parity or mirror mismatches are found and corrected during a scrub.

For non-fault-tolerant RAID levels (RAID 0 and non-RAID), media errors may indicate loss of data.

Recommended action:

- No action is required.

207.10

Error

```
A scrub-disk-group job completed. Errors were found. (number of parity or mirror mismatches
found: <numeric value>, number of media errors found: <numeric value>) (disk group: <name>, SN:
<serial number>)
```

This event is logged as Error severity when more than 100 parity or mirror mismatches are found and corrected during a scrub or when 1 to 99 parity or mirror mismatches are found and corrected during each of 10 separate scrubs of the same disk group.

For non-fault-tolerant RAID levels (RAID 0 and non-RAID), media errors may indicate loss of data.

Recommended action:

- Resolve any non-disk hardware problems, such as a cooling problem or a faulty controller module, expansion module, or power supply.
- Check whether any disks in the disk group have logged SMART events or unrecoverable read errors.
    - If so, and the disk group is a non-fault-tolerant RAID level (RAID 0 or non-RAID), copy the data to a different disk group and replace the faulty disks.
    - If so, and the disk group is a fault-tolerant RAID level, check the current state of the disk group. If it is not FTOL then back up the data as data may be at risk. If it is FTOL then replace the indicated disk. If more than one disk in the same disk group has logged a SMART event, back up the data and replace each disk one at a time. In virtual storage it may be possible to remove the affected disk group, which will drain its data to another disk group, and then re-add the disk group.

207.11

Warning

```
A scrub-disk-group job completed. Errors were found. (number of parity or mirror mismatches
found: <numeric value>, number of media errors found: <numeric value>) (disk group: <name>, SN:
<serial number>)
```

If a disk fails, data may be at risk.

Recommended action:

- Resolve any non-disk hardware problems, such as a cooling problem or a faulty controller module, expansion module, or power supply.
- Check whether any disks in the disk group have logged SMART events or unrecoverable read errors.
    - If so, and the disk group is a non-fault-tolerant RAID level (RAID 0 or non-RAID), copy the data to a different disk group and replace the faulty disks.
    - If so, and the disk group is a fault-tolerant RAID level, check the current state of the disk group. If it is not FTOL then back up the data as data may be at risk. If it is FTOL then replace the indicated disk. If more than one disk in the same disk group has logged a SMART event, back up the data and replace each disk one at a time. In virtual storage it may be possible to remove the affected disk group, which will drain its data to another disk group, and then re-add the disk group.

207.12

Info

`A scrub-disk-group job completed. Errors were found. (number of parity or mirror mismatches found: <numeric value>, number of media errors found: <numeric value>) (disk group: <name>, SN: <serial number>)`

This event is logged as Informational severity when fewer than 100 parity or mirror mismatches are found and corrected during a scrub.

For non-fault-tolerant RAID levels (RAID 0 and non-RAID), media errors may indicate loss of data.

Recommended action:

- No action is required.

207.13

Error

`A scrub-disk-group job completed. Errors were found. (number of parity or mirror mismatches found: <numeric value>, number of media errors found: <numeric value>) (disk group: <name>, SN: <serial number>)`

This event is logged as Error severity when more than 100 parity or mirror mismatches are found and corrected during a scrub or when 1 to 99 parity or mirror mismatches are found and corrected during each of 10 separate scrubs of the same disk group.

For non-fault-tolerant RAID levels (RAID 0 and non-RAID), media errors may indicate loss of data.

Recommended action:

- Resolve any non-disk hardware problems, such as a cooling problem or a faulty controller module, expansion module, or power supply.
- Check whether any disks in the disk group have logged SMART events or unrecoverable read errors.
    - If so, and the disk group is a non-fault-tolerant RAID level (RAID 0 or non-RAID), copy the data to a different disk group and replace the faulty disks.
    - If so, and the disk group is a fault-tolerant RAID level, check the current state of the disk group. If it is not FTOL then back up the data as data may be at risk. If it is FTOL then replace the indicated disk. If more than one disk in the same disk group has logged a SMART event, back up the data and replace each disk one at a time. In virtual storage it may be possible to remove the affected disk group, which will drain its data to another disk group, and then re-add the disk group.

207.14

Warning

```
A scrub-disk-group job completed. Errors were found. (number of parity or mirror mismatches
found: <numeric value>, number of media errors found: <numeric value>) (disk group: <name>, SN:
<serial number>)
```

If a disk fails, data may be at risk.

Recommended action:

- Resolve any non-disk hardware problems, such as a cooling problem or a faulty controller module, expansion module, or power supply.
- Check whether any disks in the disk group have logged SMART events or unrecoverable read errors.
  - If so, and the disk group is a non-fault-tolerant RAID level (RAID 0 or non-RAID), copy the data to a different disk group and replace the faulty disks.
  - If so, and the disk group is a fault-tolerant RAID level, check the current state of the disk group. If it is not FTOL then back up the data as data may be at risk. If it is FTOL then replace the indicated disk. If more than one disk in the same disk group has logged a SMART event, back up the data and replace each disk one at a time. In virtual storage it may be possible to remove the affected disk group, which will drain its data to another disk group, and then re-add the disk group.

207.15

Info

```
A scrub-disk-group job completed. Errors were found. (number of parity or mirror mismatches
found: <numeric value>, number of media errors found: <numeric value>) (disk group: <name>, SN:
<serial number>)
```

This event is logged as Informational severity when fewer than 100 parity or mirror mismatches are found and corrected during a scrub.

For non-fault-tolerant RAID levels (RAID 0 and non-RAID), media errors may indicate loss of data.

Recommended action:

- No action is required.

207.16

Error

```
A scrub-disk-group job completed. Errors were found. (number of parity or mirror mismatches
found: <numeric value>, number of media errors found: <numeric value>) (disk group: <name>, SN:
<serial number>)
```

This event is logged as Error severity when more than 100 parity or mirror mismatches are found and corrected during a scrub or when 1 to 99 parity or mirror mismatches are found and corrected during each of 10 separate scrubs of the same disk group.

For non-fault-tolerant RAID levels (RAID 0 and non-RAID), media errors may indicate loss of data.

Recommended action:

- Resolve any non-disk hardware problems, such as a cooling problem or a faulty controller module, expansion module, or power supply.
- Check whether any disks in the disk group have logged SMART events or unrecoverable read errors.
  - If so, and the disk group is a non-fault-tolerant RAID level (RAID 0 or non-RAID), copy the data to a different disk group and replace the faulty disks.
  - If so, and the disk group is a fault-tolerant RAID level, check the current state of the disk group. If it is not FTOL then back up the data as data may be at risk. If it is FTOL then replace the indicated disk. If more than one disk in the same disk group has logged a SMART event, back up the data and replace each disk one at a time. In virtual storage it may be possible to remove the affected disk group, which will drain its data to another disk group, and then re-add the disk group.

207.17

Warning

```
A scrub-disk-group job completed. Errors were found. (number of parity or mirror mismatches
found: <numeric value>, number of media errors found: <numeric value>) (disk group: <name>, SN:
<serial number>)
```

If a disk fails, data may be at risk.

Recommended action:

- Resolve any non-disk hardware problems, such as a cooling problem or a faulty controller module, expansion module, or power supply.
- Check whether any disks in the disk group have logged SMART events or unrecoverable read errors.
  - If so, and the disk group is a non-fault-tolerant RAID level (RAID 0 or non-RAID), copy the data to a different disk group and replace the faulty disks.
  - If so, and the disk group is a fault-tolerant RAID level, check the current state of the disk group. If it is not FTOL then back up the data as data may be at risk. If it is FTOL then replace the indicated disk. If more than one disk in the same disk group has logged a SMART event, back up the data and replace each disk one at a time. In virtual storage it may be possible to remove the affected disk group, which will drain its data to another disk group, and then re-add the disk group.

207.18

Info

```
A scrub-disk-group job completed. Errors were found. (number of parity or mirror mismatches
found: <numeric value>, number of media errors found: <numeric value>) (disk group: <name>, SN:
<serial number>)
```

This event is logged as Informational severity when fewer than 100 parity or mirror mismatches are found and corrected during a scrub.

For non-fault-tolerant RAID levels (RAID 0 and non-RAID), media errors may indicate loss of data.

Recommended action:

- No action is required.

207.19

Error

```
A scrub-disk-group job completed. Errors were found. (number of parity or mirror mismatches
found: <numeric value>, number of media errors found: <numeric value>) (disk group: <name>, SN:
<serial number>)
```

This event is logged as Error severity when more than 100 parity or mirror mismatches are found and corrected during a scrub or when 1 to 99 parity or mirror mismatches are found and corrected during each of 10 separate scrubs of the same disk group.

For non-fault-tolerant RAID levels (RAID 0 and non-RAID), media errors may indicate loss of data.

Recommended action:

- Resolve any non-disk hardware problems, such as a cooling problem or a faulty controller module, expansion module, or power supply.
- Check whether any disks in the disk group have logged SMART events or unrecoverable read errors.
  - If so, and the disk group is a non-fault-tolerant RAID level (RAID 0 or non-RAID), copy the data to a different disk group and replace the faulty disks.
  - If so, and the disk group is a fault-tolerant RAID level, check the current state of the disk group. If it is not FTOL then back up the data as data may be at risk. If it is FTOL then replace the indicated disk. If more than one disk in the same disk group has logged a SMART event, back up the data and replace each disk one at a time. In virtual storage it may be possible to remove the affected disk group, which will drain its data to another disk group, and then re-add the disk group.

207.20

Warning

`A scrub-disk-group job completed. Errors were found. (number of parity or mirror mismatches found: <numeric value>, number of media errors found: <numeric value>) (disk group: <name>, SN: <serial number>)`

If a disk fails, data may be at risk.

Recommended action:

- Resolve any non-disk hardware problems, such as a cooling problem or a faulty controller module, expansion module, or power supply.
- Check whether any disks in the disk group have logged SMART events or unrecoverable read errors.
  - If so, and the disk group is a non-fault-tolerant RAID level (RAID 0 or non-RAID), copy the data to a different disk group and replace the faulty disks.
  - If so, and the disk group is a fault-tolerant RAID level, check the current state of the disk group. If it is not FTOL then back up the data as data may be at risk. If it is FTOL then replace the indicated disk. If more than one disk in the same disk group has logged a SMART event, back up the data and replace each disk one at a time. In virtual storage it may be possible to remove the affected disk group, which will drain its data to another disk group, and then re-add the disk group.

207.21

Info

`A scrub-disk-group job completed. Errors were found. (number of parity or mirror mismatches found: <numeric value>, number of media errors found: <numeric value>) (disk group: <name>, SN: <serial number>)`

This event is logged as Informational severity when fewer than 100 parity or mirror mismatches are found and corrected during a scrub.

For non-fault-tolerant RAID levels (RAID 0 and non-RAID), media errors may indicate loss of data.

Recommended action:

- No action is required.

207.22

Error

```
A scrub-disk-group job completed. No errors were found. (disk group: <name>, SN: <serial
number>)
```

This event is logged as Error severity when more than 100 parity or mirror mismatches are found and corrected during a scrub or when 1 to 99 parity or mirror mismatches are found and corrected during each of 10 separate scrubs of the same disk group.

For non-fault-tolerant RAID levels (RAID 0 and non-RAID), media errors may indicate loss of data.

Recommended action:

- Resolve any non-disk hardware problems, such as a cooling problem or a faulty controller module, expansion module, or power supply.
- Check whether any disks in the disk group have logged SMART events or unrecoverable read errors.
    - If so, and the disk group is a non-fault-tolerant RAID level (RAID 0 or non-RAID), copy the data to a different disk group and replace the faulty disks.
    - If so, and the disk group is a fault-tolerant RAID level, check the current state of the disk group. If it is not FTOL then back up the data as data may be at risk. If it is FTOL then replace the indicated disk. If more than one disk in the same disk group has logged a SMART event, back up the data and replace each disk one at a time. In virtual storage it may be possible to remove the affected disk group, which will drain its data to another disk group, and then re-add the disk group.

207.23

Warning

```
A scrub-disk-group job completed. No errors were found. (disk group: <name>, SN: <serial
number>)
```

If a disk fails, data may be at risk.

Recommended action:

- Resolve any non-disk hardware problems, such as a cooling problem or a faulty controller module, expansion module, or power supply.
- Check whether any disks in the disk group have logged SMART events or unrecoverable read errors.
    - If so, and the disk group is a non-fault-tolerant RAID level (RAID 0 or non-RAID), copy the data to a different disk group and replace the faulty disks.
    - If so, and the disk group is a fault-tolerant RAID level, check the current state of the disk group. If it is not FTOL then back up the data as data may be at risk. If it is FTOL then replace the indicated disk. If more than one disk in the same disk group has logged a SMART event, back up the data and replace each disk one at a time. In virtual storage it may be possible to remove the affected disk group, which will drain its data to another disk group, and then re-add the disk group.

207.24

Info

```
A scrub-disk-group job completed. No errors were found. (disk group: <name>, SN: <serial
number>)
```

This event is logged as Informational severity when fewer than 100 parity or mirror mismatches are found and corrected during a scrub.

For non-fault-tolerant RAID levels (RAID 0 and non-RAID), media errors may indicate loss of data.

Recommended action:

- No action is required.

208 - Scrub disk start

208.1

Info

```
A scrub-disk job was started. (disk: channel: <channel index>, ID: <drive index>, SN: <serial
number>, enclosure: <enclosure number>, slot: <slot number>)
```

The result will be logged with event 209.

Recommended action:

- No action is required.

209 - Scrub disk completed

209.1

Error

```
A scrub-disk job was aborted by a user. Errors were found. (number of errors found: media
errors: <count>, SMART events: <count>, hard (non-media) errors: <count>, other errors:
<count>) (disk: channel: <channel index>, ID: <drive index>, SN: <serial number>, enclosure:
<enclosure number>, slot: <slot number>)
```

A scrub-disk job logged with event 208 has completed and found one or more media errors, SMART events, or hard (non-media) errors. If this disk is used in a non-fault-tolerant disk group, data may have been lost.

Recommended action:

- Replace the disk with one of the same type (SSD, enterprise SAS, or midline SAS) and the same or greater capacity. For continued optimum I/O performance, the replacement disk should have performance that is the same as or better than the one it is replacing.

209.2

Warning

```
A scrub-disk job was aborted by a user. Errors were found. (number of errors found: media
errors: <count>, SMART events: <count>, hard (non-media) errors: <count>, other errors:
<count>) (disk: channel: <channel index>, ID: <drive index>, SN: <serial number>, enclosure:
<enclosure number>, slot: <slot number>)
```

A scrub-disk job logged with event 208 has reassigned a disk block. These bad-block replacements are reported as "other errors". If this disk is used in a non-fault-tolerant disk group, data may have been lost.

Recommended action:

- Monitor the error trend and whether the number of errors approaches the total number of bad-block replacements available.

209.3

Info

```
A scrub-disk job was aborted by a user. Errors were found. (number of errors found: media
errors: <count>, SMART events: <count>, hard (non-media) errors: <count>, other errors:
<count>) (disk: channel: <channel index>, ID: <drive index>, SN: <serial number>, enclosure:
<enclosure number>, slot: <slot number>)
```

A scrub-disk job logged with event 208 has completed and found no errors, or a disk being scrubbed (with no errors found) has been added to a disk group, or a user has aborted the job.

Recommended action:

- No action is required.

209.4

Error

```
A scrub-disk job was aborted by a user. No errors were found. (disk: channel: <channel index>,
ID: <drive index>, SN: <serial number>, enclosure: <enclosure number>, slot: <slot number>)
```

A scrub-disk job logged with event 208 has completed and found one or more media errors, SMART events, or hard (non-media) errors. If this disk is used in a non-fault-tolerant disk group, data may have been lost.

Recommended action:

- Replace the disk with one of the same type (SSD, enterprise SAS, or midline SAS) and the same or greater capacity. For continued optimum I/O performance, the replacement disk should have performance that is the same as or better than the one it is replacing.

209.5

Warning

`A scrub-disk job was aborted by a user. No errors were found. (disk: channel: <channel index>, ID: <drive index>, SN: <serial number>, enclosure: <enclosure number>, slot: <slot number>)`

A scrub-disk job logged with event 208 has reassigned a disk block. These bad-block replacements are reported as "other errors". If this disk is used in a non-fault-tolerant disk group, data may have been lost.

Recommended action:

- Monitor the error trend and whether the number of errors approaches the total number of bad-block replacements available.

209.6

Info

`A scrub-disk job was aborted by a user. No errors were found. (disk: channel: <channel index>, ID: <drive index>, SN: <serial number>, enclosure: <enclosure number>, slot: <slot number>)`

A scrub-disk job logged with event 208 has completed and found no errors, or a disk being scrubbed (with no errors found) has been added to a disk group, or a user has aborted the job.

Recommended action:

- No action is required.

209.7

Error

`A scrub-disk job was aborted because of an error or other internally detected condition. Errors were found. (number of errors found: media errors: <count>, SMART events: <count>, hard (non-media) errors: <count>, other errors: <count>) (disk: channel: <channel index>, ID: <drive index>, SN: <serial number>, enclosure: <enclosure number>, slot: <slot number>)`

A scrub-disk job logged with event 208 has completed and found one or more media errors, SMART events, or hard (non-media) errors. If this disk is used in a non-fault-tolerant disk group, data may have been lost.

Recommended action:

- Replace the disk with one of the same type (SSD, enterprise SAS, or midline SAS) and the same or greater capacity. For continued optimum I/O performance, the replacement disk should have performance that is the same as or better than the one it is replacing.

209.8

Warning

```
A scrub-disk job was aborted because of an error or other internally detected condition. Errors
were found. (number of errors found: media errors: <count>, SMART events: <count>, hard (non-
media) errors: <count>, other errors: <count>) (disk: channel: <channel index>, ID: <drive
index>, SN: <serial number>, enclosure: <enclosure number>, slot: <slot number>)
```

A scrub-disk job logged with event 208 has reassigned a disk block. These bad-block replacements are reported as "other errors". If this disk is used in a non-fault-tolerant disk group, data may have been lost.

Recommended action:

- Monitor the error trend and whether the number of errors approaches the total number of bad-block replacements available.

209.9

Info

```
A scrub-disk job was aborted because of an error or other internally detected condition. Errors
were found. (number of errors found: media errors: <count>, SMART events: <count>, hard (non-
media) errors: <count>, other errors: <count>) (disk: channel: <channel index>, ID: <drive
index>, SN: <serial number>, enclosure: <enclosure number>, slot: <slot number>)
```

A scrub-disk job logged with event 208 has completed and found no errors, or a disk being scrubbed (with no errors found) has been added to a disk group, or a user has aborted the job.

Recommended action:

- No action is required.

209.10

Error

```
A scrub-disk job was aborted because of an error or other internally detected condition. No
errors were found. (disk: channel: <channel index>, ID: <drive index>, SN: <serial number>,
enclosure: <enclosure number>, slot: <slot number>)
```

A scrub-disk job logged with event 208 has completed and found one or more media errors, SMART events, or hard (non-media) errors. If this disk is used in a non-fault-tolerant disk group, data may have been lost.

Recommended action:

- Replace the disk with one of the same type (SSD, enterprise SAS, or midline SAS) and the same or greater capacity. For continued optimum I/O performance, the replacement disk should have performance that is the same as or better than the one it is replacing.

209.11

Warning

```
A scrub-disk job was aborted because of an error or other internally detected condition. No
errors were found. (disk: channel: <channel index>, ID: <drive index>, SN: <serial number>,
enclosure: <enclosure number>, slot: <slot number>)
```

A scrub-disk job logged with event 208 has reassigned a disk block. These bad-block replacements are reported as "other errors". If this disk is used in a non-fault-tolerant disk group, data may have been lost.

Recommended action:

- Monitor the error trend and whether the number of errors approaches the total number of bad-block replacements available.

209.12

Info

```
A scrub-disk job was aborted because of an error or other internally detected condition. No
errors were found. (disk: channel: <channel index>, ID: <drive index>, SN: <serial number>,
enclosure: <enclosure number>, slot: <slot number>)
```

A scrub-disk job logged with event 208 has completed and found no errors, or a disk being scrubbed (with no errors found) has been added to a disk group, or a user has aborted the job.

Recommended action:

- No action is required.

209.13

Error

```
A scrub-disk job completed. Errors were found. (number of errors found: media errors: <count>,
SMART events: <count>, hard (non-media) errors: <count>, other errors: <count>) (disk:
channel: <channel index>, ID: <drive index>, SN: <serial number>, enclosure: <enclosure
number>, slot: <slot number>)
```

A scrub-disk job logged with event 208 has completed and found one or more media errors, SMART events, or hard (non-media) errors. If this disk is used in a non-fault-tolerant disk group, data may have been lost.

Recommended action:

- Replace the disk with one of the same type (SSD, enterprise SAS, or midline SAS) and the same or greater capacity. For continued optimum I/O performance, the replacement disk should have performance that is the same as or better than the one it is replacing.

209.14

Warning

```
A scrub-disk job completed. Errors were found. (number of errors found: media errors: <count>,
SMART events: <count>, hard (non-media) errors: <count>, other errors: <count>) (disk:
channel: <channel index>, ID: <drive index>, SN: <serial number>, enclosure: <enclosure
number>, slot: <slot number>)
```

A scrub-disk job logged with event 208 has reassigned a disk block. These bad-block replacements are reported as "other errors". If this disk is used in a non-fault-tolerant disk group, data may have been lost.

Recommended action:

- Monitor the error trend and whether the number of errors approaches the total number of bad-block replacements available.

209.15

Info

```
A scrub-disk job completed. Errors were found. (number of errors found: media errors: <count>,
SMART events: <count>, hard (non-media) errors: <count>, other errors: <count>) (disk:
channel: <channel index>, ID: <drive index>, SN: <serial number>, enclosure: <enclosure
number>, slot: <slot number>)
```

A scrub-disk job logged with event 208 has completed and found no errors, or a disk being scrubbed (with no errors found) has been added to a disk group, or a user has aborted the job.

Recommended action:

- No action is required.

209.16

Error

```
A scrub-disk job completed. No errors were found. (disk: channel: <channel index>, ID: <drive
index>, SN: <serial number>, enclosure: <enclosure number>, slot: <slot number>)
```

A scrub-disk job logged with event 208 has completed and found one or more media errors, SMART events, or hard (non-media) errors. If this disk is used in a non-fault-tolerant disk group, data may have been lost.

Recommended action:

- Replace the disk with one of the same type (SSD, enterprise SAS, or midline SAS) and the same or greater capacity. For continued optimum I/O performance, the replacement disk should have performance that is the same as or better than the one it is replacing.

209.17

Warning

`A scrub-disk job completed. No errors were found. (disk: channel: <channel index>, ID: <drive index>, SN: <serial number>, enclosure: <enclosure number>, slot: <slot number>)`

A scrub-disk job logged with event 208 has reassigned a disk block. These bad-block replacements are reported as "other errors". If this disk is used in a non-fault-tolerant disk group, data may have been lost.

Recommended action:

- Monitor the error trend and whether the number of errors approaches the total number of bad-block replacements available.

209.18

Info

`A scrub-disk job completed. No errors were found. (disk: channel: <channel index>, ID: <drive index>, SN: <serial number>, enclosure: <enclosure number>, slot: <slot number>)`

A scrub-disk job logged with event 208 has completed and found no errors, or a disk being scrubbed (with no errors found) has been added to a disk group, or a user has aborted the job.

Recommended action:

- No action is required.

211 - SAS topology changed

211.1

Warning

`The SAS topology changed (hardware components were added or removed). (Channel: <channel index>, number of elements: <number of elements>, expanders: <expanders>, native levels: <native levels>, partner levels: <partner levels>, device PHYs: <device PHYs>)`

SAS topology has changed. No elements are detected in the SAS map. The message specifies the number of elements in the SAS map, the number of expanders detected, the number of expansion levels on the native (local controller) side and on the partner (partner controller) side, and the number of device PHYs.

Recommended action:

- Perform a rescan to repopulate the SAS map.
- If a rescan does not resolve the problem, then shut down and restart both Storage Controllers.
- If the problem persists, see "Resources for diagnosing and resolving problems" in the Event Descriptions Reference Guide.

211.2

Info

`The SAS topology changed (hardware components were added or removed). (Channel: <channel index>, number of elements: <number of elements>, expanders: <expanders>, native levels: <native levels>, partner levels: <partner levels>, device PHYs: <device PHYs>)`

SAS topology has changed. The number of SAS expanders has increased or decreased. The message specifies the number of elements in the SAS map, the number of expanders detected, the number of expansion levels on the native (local controller) side and on the partner (partner controller) side, and the number of device PHYs.

Recommended action:

• No action is required.

217 - Supercapacitor fault

217.1

Error

`Supercapacitor failure. Status: charging current is too high (<description>), State: reset (<text>) (p2: <text>, p3: <text>)`

Recommended action:

• Replace the controller module that logged this event.

217.2

Error

`Supercapacitor failure. Status: charging current is too high (<description>), State: charge started (<text>) (p2: <text>, p3: <text>)`

Recommended action:

• Replace the controller module that logged this event.

217.3

Error

`Supercapacitor failure. Status: charging current is too high (<description>), State: charge pending (<text>) (p2: <text>, p3: <text>)`

Recommended action:

• Replace the controller module that logged this event.

217.4

Error

`Supercapacitor failure. Status: charging current is too high (<description>), State: charge completed (<text>) (p2: <text>, p3: <text>)`

Recommended action:

• Replace the controller module that logged this event.

217.5

Error

```
Supercapacitor failure. Status: charging current is too high (<description>), State: failure
(<text>) (p2: <text>, p3: <text>)
```

Recommended action:

• Replace the controller module that logged this event.

217.6

Error

```
Supercapacitor failure. Status: charging current is too high (<description>), State: unknown
(<text>) (p2: <text>, p3: <text>)
```

Recommended action:

• Replace the controller module that logged this event.

217.7

Error

```
Supercapacitor failure. Status: it is taking too long to charge (<description>), State: reset
(<text>) (p2: <text>, p3: <text>)
```

Recommended action:

• Replace the controller module that logged this event.

217.8

Error

```
Supercapacitor failure. Status: it is taking too long to charge (<description>), State: charge
started (<text>) (p2: <text>, p3: <text>)
```

Recommended action:

• Replace the controller module that logged this event.

217.9

Error

```
Supercapacitor failure. Status: it is taking too long to charge (<description>), State: charge
pending (<text>) (p2: <text>, p3: <text>)
```

Recommended action:

• Replace the controller module that logged this event.

217.10

Error

```
Supercapacitor failure. Status: it is taking too long to charge (<description>), State: charge
completed (<text>) (p2: <text>, p3: <text>)
```

Recommended action:

• Replace the controller module that logged this event.

217.11

Error

Supercapacitor failure. Status: it is taking too long to charge (<description>), State: failure (<text>) (p2: <text>, p3: <text>)

Recommended action:

- Replace the controller module that logged this event.

217.12

Error

Supercapacitor failure. Status: it is taking too long to charge (<description>), State: unknown (<text>) (p2: <text>, p3: <text>)

Recommended action:

- Replace the controller module that logged this event.

217.13

Error

Supercapacitor failure. Status: cell 1 charging voltage is too high (<description>), State: reset (<text>) (p2: <text>, p3: <text>)

Recommended action:

- Replace the controller module that logged this event.

217.14

Error

Supercapacitor failure. Status: cell 1 charging voltage is too high (<description>), State: charge started (<text>) (p2: <text>, p3: <text>)

Recommended action:

- Replace the controller module that logged this event.

217.15

Error

Supercapacitor failure. Status: cell 1 charging voltage is too high (<description>), State: charge pending (<text>) (p2: <text>, p3: <text>)

Recommended action:

- Replace the controller module that logged this event.

217.16

Error

Supercapacitor failure. Status: cell 1 charging voltage is too high (<description>), State: charge completed (<text>) (p2: <text>, p3: <text>)

Recommended action:

- Replace the controller module that logged this event.

217.17

Error

```
Supercapacitor failure. Status: cell 1 charging voltage is too high (<description>), State:
failure (<text>) (p2: <text>, p3: <text>)
```

Recommended action:

- Replace the controller module that logged this event.

217.18

Error

```
Supercapacitor failure. Status: cell 1 charging voltage is too high (<description>), State:
unknown (<text>) (p2: <text>, p3: <text>)
```

Recommended action:

- Replace the controller module that logged this event.

217.19

Error

```
Supercapacitor failure. Status: cell 2 charging voltage is too high (<description>), State:
reset (<text>) (p2: <text>, p3: <text>)
```

Recommended action:

- Replace the controller module that logged this event.

217.20

Error

```
Supercapacitor failure. Status: cell 2 charging voltage is too high (<description>), State:
charge started (<text>) (p2: <text>, p3: <text>)
```

Recommended action:

- Replace the controller module that logged this event.

217.21

Error

```
Supercapacitor failure. Status: cell 2 charging voltage is too high (<description>), State:
charge pending (<text>) (p2: <text>, p3: <text>)
```

Recommended action:

- Replace the controller module that logged this event.

217.22

Error

```
Supercapacitor failure. Status: cell 2 charging voltage is too high (<description>), State:
charge completed (<text>) (p2: <text>, p3: <text>)
```

Recommended action:

- Replace the controller module that logged this event.

217.23

Error

```
Supercapacitor failure. Status: cell 2 charging voltage is too high (<description>), State:
failure (<text>) (p2: <text>, p3: <text>)
```

Recommended action:

- Replace the controller module that logged this event.

217.24

Error

```
Supercapacitor failure. Status: cell 2 charging voltage is too high (<description>), State:
unknown (<text>) (p2: <text>, p3: <text>)
```

Recommended action:

- Replace the controller module that logged this event.

217.25

Error

```
Supercapacitor failure. Status: cell 3 charging voltage is too high (<description>), State:
reset (<text>) (p2: <text>, p3: <text>)
```

Recommended action:

- Replace the controller module that logged this event.

217.26

Error

```
Supercapacitor failure. Status: cell 3 charging voltage is too high (<description>), State:
charge started (<text>) (p2: <text>, p3: <text>)
```

Recommended action:

- Replace the controller module that logged this event.

217.27

Error

```
Supercapacitor failure. Status: cell 3 charging voltage is too high (<description>), State:
charge pending (<text>) (p2: <text>, p3: <text>)
```

Recommended action:

- Replace the controller module that logged this event.

217.28

Error

```
Supercapacitor failure. Status: cell 3 charging voltage is too high (<description>), State:
charge completed (<text>) (p2: <text>, p3: <text>)
```

Recommended action:

- Replace the controller module that logged this event.

217.29

Error

```
Supercapacitor failure. Status: cell 3 charging voltage is too high (<description>), State:
failure (<text>) (p2: <text>, p3: <text>)
```

Recommended action:

- Replace the controller module that logged this event.

217.30

Error

```
Supercapacitor failure. Status: cell 3 charging voltage is too high (<description>), State:
unknown (<text>) (p2: <text>, p3: <text>)
```

Recommended action:

- Replace the controller module that logged this event.

217.31

Error

```
Supercapacitor failure. Status: cell 4 charging voltage is too high (<description>), State:
reset (<text>) (p2: <text>, p3: <text>)
```

Recommended action:

- Replace the controller module that logged this event.

217.32

Error

```
Supercapacitor failure. Status: cell 4 charging voltage is too high (<description>), State:
charge started (<text>) (p2: <text>, p3: <text>)
```

Recommended action:

- Replace the controller module that logged this event.

217.33

Error

```
Supercapacitor failure. Status: cell 4 charging voltage is too high (<description>), State:
charge pending (<text>) (p2: <text>, p3: <text>)
```

Recommended action:

- Replace the controller module that logged this event.

217.34

Error

```
Supercapacitor failure. Status: cell 4 charging voltage is too high (<description>), State:
charge completed (<text>) (p2: <text>, p3: <text>)
```

Recommended action:

- Replace the controller module that logged this event.

217.35

Error

`Supercapacitor failure. Status: cell 4 charging voltage is too high (<description>), State:`
`failure (<text>) (p2: <text>, p3: <text>)`

Recommended action:

- Replace the controller module that logged this event.

217.36

Error

`Supercapacitor failure. Status: cell 4 charging voltage is too high (<description>), State:`
`unknown (<text>) (p2: <text>, p3: <text>)`

Recommended action:

- Replace the controller module that logged this event.

217.37

Error

`Supercapacitor failure. Status: cell 1 voltage is too high (<description>), State: reset`
`(<text>) (p2: <text>, p3: <text>)`

Recommended action:

- Replace the controller module that logged this event.

217.38

Error

`Supercapacitor failure. Status: cell 1 voltage is too high (<description>), State: charge`
`started (<text>) (p2: <text>, p3: <text>)`

Recommended action:

- Replace the controller module that logged this event.

217.39

Error

`Supercapacitor failure. Status: cell 1 voltage is too high (<description>), State: charge`
`pending (<text>) (p2: <text>, p3: <text>)`

Recommended action:

- Replace the controller module that logged this event.

217.40

Error

`Supercapacitor failure. Status: cell 1 voltage is too high (<description>), State: charge`
`completed (<text>) (p2: <text>, p3: <text>)`

Recommended action:

- Replace the controller module that logged this event.

217.41

Error

Supercapacitor failure. Status: cell 1 voltage is too high (<description>), State: failure
(<text>) (p2: <text>, p3: <text>)

Recommended action:

- Replace the controller module that logged this event.

217.42

Error

Supercapacitor failure. Status: cell 1 voltage is too high (<description>), State: unknown
(<text>) (p2: <text>, p3: <text>)

Recommended action:

- Replace the controller module that logged this event.

217.43

Error

Supercapacitor failure. Status: cell 2 voltage is too high (<description>), State: reset
(<text>) (p2: <text>, p3: <text>)

Recommended action:

- Replace the controller module that logged this event.

217.44

Error

Supercapacitor failure. Status: cell 2 voltage is too high (<description>), State: charge
started (<text>) (p2: <text>, p3: <text>)

Recommended action:

- Replace the controller module that logged this event.

217.45

Error

Supercapacitor failure. Status: cell 2 voltage is too high (<description>), State: charge
pending (<text>) (p2: <text>, p3: <text>)

Recommended action:

- Replace the controller module that logged this event.

217.46

Error

Supercapacitor failure. Status: cell 2 voltage is too high (<description>), State: charge
completed (<text>) (p2: <text>, p3: <text>)

Recommended action:

- Replace the controller module that logged this event.

217.47

Error

Supercapacitor failure. Status: cell 2 voltage is too high (<description>), State: failure (<text>) (p2: <text>, p3: <text>)

Recommended action:

- Replace the controller module that logged this event.

217.48

Error

Supercapacitor failure. Status: cell 2 voltage is too high (<description>), State: unknown (<text>) (p2: <text>, p3: <text>)

Recommended action:

- Replace the controller module that logged this event.

217.49

Error

Supercapacitor failure. Status: cell 3 voltage is too high (<description>), State: reset (<text>) (p2: <text>, p3: <text>)

Recommended action:

- Replace the controller module that logged this event.

217.50

Error

Supercapacitor failure. Status: cell 3 voltage is too high (<description>), State: charge started (<text>) (p2: <text>, p3: <text>)

Recommended action:

- Replace the controller module that logged this event.

217.51

Error

Supercapacitor failure. Status: cell 3 voltage is too high (<description>), State: charge pending (<text>) (p2: <text>, p3: <text>)

Recommended action:

- Replace the controller module that logged this event.

217.52

Error

Supercapacitor failure. Status: cell 3 voltage is too high (<description>), State: charge completed (<text>) (p2: <text>, p3: <text>)

Recommended action:

- Replace the controller module that logged this event.

217.53

Error

```
Supercapacitor failure. Status: cell 3 voltage is too high (<description>), State: failure
(<text>) (p2: <text>, p3: <text>)
```

Recommended action:

- Replace the controller module that logged this event.

217.54

Error

```
Supercapacitor failure. Status: cell 3 voltage is too high (<description>), State: unknown
(<text>) (p2: <text>, p3: <text>)
```

Recommended action:

- Replace the controller module that logged this event.

217.55

Error

```
Supercapacitor failure. Status: cell 4 voltage is too high (<description>), State: reset
(<text>) (p2: <text>, p3: <text>)
```

Recommended action:

- Replace the controller module that logged this event.

217.56

Error

```
Supercapacitor failure. Status: cell 4 voltage is too high (<description>), State: charge
started (<text>) (p2: <text>, p3: <text>)
```

Recommended action:

- Replace the controller module that logged this event.

217.57

Error

```
Supercapacitor failure. Status: cell 4 voltage is too high (<description>), State: charge
pending (<text>) (p2: <text>, p3: <text>)
```

Recommended action:

- Replace the controller module that logged this event.

217.58

Error

```
Supercapacitor failure. Status: cell 4 voltage is too high (<description>), State: charge
completed (<text>) (p2: <text>, p3: <text>)
```

Recommended action:

- Replace the controller module that logged this event.

217.59

Error

Supercapacitor failure. Status: cell 4 voltage is too high (<description>), State: failure (<text>) (p2: <text>, p3: <text>)

Recommended action:

- Replace the controller module that logged this event.

217.60

Error

Supercapacitor failure. Status: cell 4 voltage is too high (<description>), State: unknown (<text>) (p2: <text>, p3: <text>)

Recommended action:

- Replace the controller module that logged this event.

217.61

Error

Supercapacitor failure. Status: pack voltage is too high (<description>), State: reset (<text>) (p2: <text>, p3: <text>)

Recommended action:

- Replace the controller module that logged this event.

217.62

Error

Supercapacitor failure. Status: pack voltage is too high (<description>), State: charge started (<text>) (p2: <text>, p3: <text>)

Recommended action:

- Replace the controller module that logged this event.

217.63

Error

Supercapacitor failure. Status: pack voltage is too high (<description>), State: charge pending (<text>) (p2: <text>, p3: <text>)

Recommended action:

- Replace the controller module that logged this event.

217.64

Error

Supercapacitor failure. Status: pack voltage is too high (<description>), State: charge completed (<text>) (p2: <text>, p3: <text>)

Recommended action:

- Replace the controller module that logged this event.

217.65

Error

```
Supercapacitor failure. Status: pack voltage is too high (<description>), State: failure
(<text>) (p2: <text>, p3: <text>)
```

Recommended action:

- Replace the controller module that logged this event.

217.66

Error

```
Supercapacitor failure. Status: pack voltage is too high (<description>), State: unknown
(<text>) (p2: <text>, p3: <text>)
```

Recommended action:

- Replace the controller module that logged this event.

217.67

Error

```
Supercapacitor failure. Status: pack voltage is too low (<description>), State: reset (<text>)
(p2: <text>, p3: <text>)
```

Recommended action:

- Replace the controller module that logged this event.

217.68

Error

```
Supercapacitor failure. Status: pack voltage is too low (<description>), State: charge started
(<text>) (p2: <text>, p3: <text>)
```

Recommended action:

- Replace the controller module that logged this event.

217.69

Error

```
Supercapacitor failure. Status: pack voltage is too low (<description>), State: charge pending
(<text>) (p2: <text>, p3: <text>)
```

Recommended action:

- Replace the controller module that logged this event.

217.70

Error

```
Supercapacitor failure. Status: pack voltage is too low (<description>), State: charge
completed (<text>) (p2: <text>, p3: <text>)
```

Recommended action:

- Replace the controller module that logged this event.

217.71

Error

Supercapacitor failure. Status: pack voltage is too low (<description>), State: failure (<text>) (p2: <text>, p3: <text>)

Recommended action:

- Replace the controller module that logged this event.

217.72

Error

Supercapacitor failure. Status: pack voltage is too low (<description>), State: unknown (<text>) (p2: <text>, p3: <text>)

Recommended action:

- Replace the controller module that logged this event.

217.73

Error

Supercapacitor failure. Status: pack is not installed (<description>), State: reset (<text>) (p2: <text>, p3: <text>)

Recommended action:

- Replace the controller module that logged this event.

217.74

Error

Supercapacitor failure. Status: pack is not installed (<description>), State: charge started (<text>) (p2: <text>, p3: <text>)

Recommended action:

- Replace the controller module that logged this event.

217.75

Error

Supercapacitor failure. Status: pack is not installed (<description>), State: charge pending (<text>) (p2: <text>, p3: <text>)

Recommended action:

- Replace the controller module that logged this event.

217.76

Error

Supercapacitor failure. Status: pack is not installed (<description>), State: charge completed (<text>) (p2: <text>, p3: <text>)

Recommended action:

- Replace the controller module that logged this event.

217.77

Error

Supercapacitor failure. Status: pack is not installed (<description>), State: failure (<text>) (p2: <text>, p3: <text>)

Recommended action:

- Replace the controller module that logged this event.

217.78

Error

Supercapacitor failure. Status: pack is not installed (<description>), State: unknown (<text>) (p2: <text>, p3: <text>)

Recommended action:

- Replace the controller module that logged this event.

217.79

Error

Supercapacitor failure. Status: pack has bad thermistor (<description>), State: reset (<text>) (p2: <text>, p3: <text>)

Recommended action:

- Replace the controller module that logged this event.

217.80

Error

Supercapacitor failure. Status: pack has bad thermistor (<description>), State: charge started (<text>) (p2: <text>, p3: <text>)

Recommended action:

- Replace the controller module that logged this event.

217.81

Error

Supercapacitor failure. Status: pack has bad thermistor (<description>), State: charge pending (<text>) (p2: <text>, p3: <text>)

Recommended action:

- Replace the controller module that logged this event.

217.82

Error

Supercapacitor failure. Status: pack has bad thermistor (<description>), State: charge completed (<text>) (p2: <text>, p3: <text>)

Recommended action:

- Replace the controller module that logged this event.

217.83

Error

Supercapacitor failure. Status: pack has bad thermistor (<description>), State: failure
(<text>) (p2: <text>, p3: <text>)

Recommended action:

- Replace the controller module that logged this event.

217.84

Error

Supercapacitor failure. Status: pack has bad thermistor (<description>), State: unknown
(<text>) (p2: <text>, p3: <text>)

Recommended action:

- Replace the controller module that logged this event.

217.85

Error

Supercapacitor failure. Status: second pack is not installed (<description>), State: reset
(<text>) (p2: <text>, p3: <text>)

Recommended action:

- Replace the controller module that logged this event.

217.86

Error

Supercapacitor failure. Status: second pack is not installed (<description>), State: charge
started (<text>) (p2: <text>, p3: <text>)

Recommended action:

- Replace the controller module that logged this event.

217.87

Error

Supercapacitor failure. Status: second pack is not installed (<description>), State: charge
pending (<text>) (p2: <text>, p3: <text>)

Recommended action:

- Replace the controller module that logged this event.

217.88

Error

Supercapacitor failure. Status: second pack is not installed (<description>), State: charge
completed (<text>) (p2: <text>, p3: <text>)

Recommended action:

- Replace the controller module that logged this event.

217.89

Error

```
Supercapacitor failure. Status: second pack is not installed (<description>), State: failure
(<text>) (p2: <text>, p3: <text>)
```

Recommended action:

- Replace the controller module that logged this event.

217.90

Error

```
Supercapacitor failure. Status: second pack is not installed (<description>), State: unknown
(<text>) (p2: <text>, p3: <text>)
```

Recommended action:

- Replace the controller module that logged this event.

217.91

Error

```
Supercapacitor failure. Status: pack capacity is too low (<description>), State: reset
(<text>) (p2: <text>, p3: <text>)
```

Recommended action:

- Replace the controller module that logged this event.

217.92

Error

```
Supercapacitor failure. Status: pack capacity is too low (<description>), State: charge
started (<text>) (p2: <text>, p3: <text>)
```

Recommended action:

- Replace the controller module that logged this event.

217.93

Error

```
Supercapacitor failure. Status: pack capacity is too low (<description>), State: charge
pending (<text>) (p2: <text>, p3: <text>)
```

Recommended action:

- Replace the controller module that logged this event.

217.94

Error

```
Supercapacitor failure. Status: pack capacity is too low (<description>), State: charge
completed (<text>) (p2: <text>, p3: <text>)
```

Recommended action:

- Replace the controller module that logged this event.

217.95

Error

Supercapacitor failure. Status: pack capacity is too low (<description>), State: failure (<text>) (p2: <text>, p3: <text>)

Recommended action:

- Replace the controller module that logged this event.

217.96

Error

Supercapacitor failure. Status: pack capacity is too low (<description>), State: unknown (<text>) (p2: <text>, p3: <text>)

Recommended action:

- Replace the controller module that logged this event.

217.97

Error

Supercapacitor failure. Status: pack is not calibrated (<description>), State: reset (<text>) (p2: <text>, p3: <text>)

Recommended action:

- Replace the controller module that logged this event.

217.98

Error

Supercapacitor failure. Status: pack is not calibrated (<description>), State: charge started (<text>) (p2: <text>, p3: <text>)

Recommended action:

- Replace the controller module that logged this event.

217.99

Error

Supercapacitor failure. Status: pack is not calibrated (<description>), State: charge pending (<text>) (p2: <text>, p3: <text>)

Recommended action:

- Replace the controller module that logged this event.

217.100

Error

Supercapacitor failure. Status: pack is not calibrated (<description>), State: charge completed (<text>) (p2: <text>, p3: <text>)

Recommended action:

- Replace the controller module that logged this event.

217.101

Error

```
Supercapacitor failure. Status: pack is not calibrated (<description>), State: failure
(<text>) (p2: <text>, p3: <text>)
```

Recommended action:

- Replace the controller module that logged this event.

217.102

Error

```
Supercapacitor failure. Status: pack is not calibrated (<description>), State: unknown
(<text>) (p2: <text>, p3: <text>)
```

Recommended action:

- Replace the controller module that logged this event.

217.103

Error

```
Supercapacitor failure. Status: unknown (<description>), State: reset (<text>) (p2: <text>,
p3: <text>)
```

Recommended action:

- Replace the controller module that logged this event.

217.104

Error

```
Supercapacitor failure. Status: unknown (<description>), State: charge started (<text>) (p2:
<text>, p3: <text>)
```

Recommended action:

- Replace the controller module that logged this event.

217.105

Error

```
Supercapacitor failure. Status: unknown (<description>), State: charge pending (<text>) (p2:
<text>, p3: <text>)
```

Recommended action:

- Replace the controller module that logged this event.

217.106

Error

```
Supercapacitor failure. Status: unknown (<description>), State: charge completed (<text>) (p2:
<text>, p3: <text>)
```

Recommended action:

- Replace the controller module that logged this event.

217.107

Error

`Supercapacitor failure. Status: unknown (<description>), State: failure (<text>) (p2: <text>, p3: <text>)`

Recommended action:

- Replace the controller module that logged this event.

217.108

Error

`Supercapacitor failure. Status: unknown (<description>), State: unknown (<text>) (p2: <text>, p3: <text>)`

Recommended action:

- Replace the controller module that logged this event.

218 - Supercapacitor end of life

218.1

Warning

`The supercapacitor has reached end of life. The controller should be replaced.`

Recommended action:

- Replace the controller module that logged this event.

219 - Job priority changed

219.1

Info

`Job priority was changed from <numeric value> to <numeric value>.`

Utility priority has been changed by a user.

Recommended action:

- No action is required.

232 - Maximum enclosures exceeded

232.1

Warning

`The number of enclosures exceeds the configuration limit. (excess enclosure number: <enclosure number>, on channel: <channel index>, WWN: <World Wide Name>)`

The platform does not support the number of enclosures that are configured. The enclosure indicated by this event has been removed from the configuration.

Recommended action:

- Reconfigure the system.

233 - Disk type not allowed

233.1

Warning

`An invalid disk type was detected. SAS disks are not allowed. (Enclosure: <enclosure number>, WWN: <World Wide Name>)`

All disks of the disallowed type have been removed from the configuration.

Recommended action:

- Replace the disallowed disks with ones that are supported.

233.2

Warning

`An invalid disk type was detected. SATA disks are not allowed. (Enclosure: <enclosure number>, WWN: <World Wide Name>)`

All disks of the disallowed type have been removed from the configuration.

Recommended action:

- Replace the disallowed disks with ones that are supported.

233.3

Warning

`An invalid disk type was detected. Mixed disk types are not allowed. (Enclosure: <enclosure number>, WWN: <World Wide Name>)`

All disks of the disallowed type have been removed from the configuration.

Recommended action:

- Replace the disallowed disks with ones that are supported.

235 - EMP error

235.1

Info

`An event was reported by an EMP. (channel: <channel index>, ID: <device identifier>, enclosure: <drive index>, module: <identifier>) (<key code qualifier decode string>) (<numeric value>)<numeric value>(<sense key decode string>, <additional sense code qualifier decode string>)`

None.

Recommended action:

- No action is required.

235.2

Error

An error was reported by an EMP. (channel: <channel index>, ID: <device identifier>, enclosure: <drive index>, module: <identifier>) (<key code qualifier decode string>) (<numeric value>)<numeric value>(<sense key decode string>, <additional sense code qualifier decode string>)

An enclosure management processor (EMP) detected a serious error.

Recommended action:

- Replace the indicated controller module or expansion module.

236 - Storage Controller shutdown

236.1

Info

A Storage Controller received a shutdown command. (special shutdown type: Normal, controller: A)

A special shutdown operation has started. These special shutdown types are used as part of the firmware-update process.

Recommended action:

- No action is required.

236.2

Error

A Storage Controller received a shutdown command. (special shutdown type: Normal, controller: A)

A special shutdown operation has started. These special shutdown types indicate an incompatible feature.

Recommended action:

- Replace the indicated controller module with one that supports the indicated feature.

236.3

Info

A Storage Controller received a shutdown command. (special shutdown type: SC firmware update, controller: A)

A special shutdown operation has started. These special shutdown types are used as part of the firmware-update process.

Recommended action:

- No action is required.

236.4

Error

```
A Storage Controller received a shutdown command. (special shutdown type: SC firmware update,
controller: A)
```

A special shutdown operation has started. These special shutdown types indicate an incompatible feature.

Recommended action:

- Replace the indicated controller module with one that supports the indicated feature.

236.5

Info

```
A Storage Controller received a shutdown command. (special shutdown type: SC firmware update,
no restart, controller: A)
```

A special shutdown operation has started. These special shutdown types are used as part of the firmware-update process.

Recommended action:

- No action is required.

236.6

Error

```
A Storage Controller received a shutdown command. (special shutdown type: SC firmware update,
no restart, controller: A)
```

A special shutdown operation has started. These special shutdown types indicate an incompatible feature.

Recommended action:

- Replace the indicated controller module with one that supports the indicated feature.

236.7

Info

```
A Storage Controller received a shutdown command. (special shutdown type: CPLD code update,
controller: A)
```

A special shutdown operation has started. These special shutdown types are used as part of the firmware-update process.

Recommended action:

- No action is required.

236.8

Error

```
A Storage Controller received a shutdown command. (special shutdown type: CPLD code update,
controller: A)
```

A special shutdown operation has started. These special shutdown types indicate an incompatible feature.

Recommended action:

- Replace the indicated controller module with one that supports the indicated feature.

236.9

Info

```
A Storage Controller received a shutdown command. (special shutdown type: EC restart,
controller: A)
```

A special shutdown operation has started. These special shutdown types are used as part of the firmware-update process.

Recommended action:

- No action is required.

236.10

Error

```
A Storage Controller received a shutdown command. (special shutdown type: EC restart,
controller: A)
```

A special shutdown operation has started. These special shutdown types indicate an incompatible feature.

Recommended action:

- Replace the indicated controller module with one that supports the indicated feature.

236.13

Info

```
A Storage Controller received a shutdown command. (special shutdown type: FDE unsupported,
controller: A)
```

A special shutdown operation has started. These special shutdown types are used as part of the firmware-update process.

Recommended action:

- No action is required.

236.14

Error

```
A Storage Controller received a shutdown command. (special shutdown type: FDE unsupported,
controller: A)
```

A special shutdown operation has started. These special shutdown types indicate an incompatible feature.

Recommended action:

- Replace the indicated controller module with one that supports the indicated feature.

236.15

Info

```
A Storage Controller received a shutdown command. (special shutdown type: Burn-to-Active
configuration change, controller: A)
```

A special shutdown operation has started. These special shutdown types are used as part of the firmware-update process.

Recommended action:

- No action is required.

236.16

Error

A Storage Controller received a shutdown command. (special shutdown type: Burn-to-Active configuration change, controller: A)

A special shutdown operation has started. These special shutdown types indicate an incompatible feature.

Recommended action:

- Replace the indicated controller module with one that supports the indicated feature.

236.17

Info

A Storage Controller received a shutdown command. (special shutdown type: Configuration change, controller: A)

A special shutdown operation has started. These special shutdown types are used as part of the firmware-update process.

Recommended action:

- No action is required.

236.18

Error

A Storage Controller received a shutdown command. (special shutdown type: Configuration change, controller: A)

A special shutdown operation has started. These special shutdown types indicate an incompatible feature.

Recommended action:

- Replace the indicated controller module with one that supports the indicated feature.

236.19

Info

A Storage Controller received a shutdown command. (special shutdown type: Restore pool on restart, controller: A)

A special shutdown operation has started. These special shutdown types are used as part of the firmware-update process.

Recommended action:

- No action is required.

236.20

Error

A Storage Controller received a shutdown command. (special shutdown type: Restore pool on restart, controller: A)

A special shutdown operation has started. These special shutdown types indicate an incompatible feature.

Recommended action:

- Replace the indicated controller module with one that supports the indicated feature.

236.21

Info

```
A Storage Controller received a shutdown command. (special shutdown type: SAS X2 mode change,
controller: A)
```

A special shutdown operation has started. These special shutdown types are used as part of the firmware-update process.

Recommended action:

- No action is required.

236.22

Error

```
A Storage Controller received a shutdown command. (special shutdown type: SAS X2 mode change,
controller: A)
```

A special shutdown operation has started. These special shutdown types indicate an incompatible feature.

Recommended action:

- Replace the indicated controller module with one that supports the indicated feature.

236.23

Info

```
A Storage Controller received a shutdown command. (special shutdown type: Pool recovery,
controller: A)
```

A special shutdown operation has started. These special shutdown types are used as part of the firmware-update process.

Recommended action:

- No action is required.

236.24

Error

```
A Storage Controller received a shutdown command. (special shutdown type: Pool recovery,
controller: A)
```

A special shutdown operation has started. These special shutdown types indicate an incompatible feature.

Recommended action:

- Replace the indicated controller module with one that supports the indicated feature.

236.25

Info

```
A Storage Controller received a shutdown command. (special shutdown type: Unknown shutdown
type=<numeric value>, controller: A)
```

A special shutdown operation has started. These special shutdown types are used as part of the firmware-update process.

Recommended action:

- No action is required.

236.26

Error

```
A Storage Controller received a shutdown command. (special shutdown type: Unknown shutdown
type=<numeric value>, controller: A)
```

A special shutdown operation has started. These special shutdown types indicate an incompatible feature.

Recommended action:

- Replace the indicated controller module with one that supports the indicated feature.

236.27

Info

```
A Storage Controller received a shutdown command. (special shutdown type: Normal, controller:
B)
```

A special shutdown operation has started. These special shutdown types are used as part of the firmware-update process.

Recommended action:

- No action is required.

236.28

Error

```
A Storage Controller received a shutdown command. (special shutdown type: Normal, controller:
B)
```

A special shutdown operation has started. These special shutdown types indicate an incompatible feature.

Recommended action:

- Replace the indicated controller module with one that supports the indicated feature.

236.29

Info

```
A Storage Controller received a shutdown command. (special shutdown type: SC firmware update,
controller: B)
```

A special shutdown operation has started. These special shutdown types are used as part of the firmware-update process.

Recommended action:

- No action is required.

236.30

Error

```
A Storage Controller received a shutdown command. (special shutdown type: SC firmware update,
controller: B)
```

A special shutdown operation has started. These special shutdown types indicate an incompatible feature.

Recommended action:

- Replace the indicated controller module with one that supports the indicated feature.

236.31

Info

A Storage Controller received a shutdown command. (special shutdown type: SC firmware update, no restart, controller: B)

A special shutdown operation has started. These special shutdown types are used as part of the firmware-update process.

Recommended action:

- No action is required.

236.32

Error

A Storage Controller received a shutdown command. (special shutdown type: SC firmware update, no restart, controller: B)

A special shutdown operation has started. These special shutdown types indicate an incompatible feature.

Recommended action:

- Replace the indicated controller module with one that supports the indicated feature.

236.33

Info

A Storage Controller received a shutdown command. (special shutdown type: CPLD code update, controller: B)

A special shutdown operation has started. These special shutdown types are used as part of the firmware-update process.

Recommended action:

- No action is required.

236.34

Error

A Storage Controller received a shutdown command. (special shutdown type: CPLD code update, controller: B)

A special shutdown operation has started. These special shutdown types indicate an incompatible feature.

Recommended action:

- Replace the indicated controller module with one that supports the indicated feature.

236.35

Info

A Storage Controller received a shutdown command. (special shutdown type: EC restart, controller: B)

A special shutdown operation has started. These special shutdown types are used as part of the firmware-update process.

Recommended action:

- No action is required.

236.36

Error

`A Storage Controller received a shutdown command. (special shutdown type: EC restart, controller: B)`

A special shutdown operation has started. These special shutdown types indicate an incompatible feature.

Recommended action:

- Replace the indicated controller module with one that supports the indicated feature.

236.39

Info

`A Storage Controller received a shutdown command. (special shutdown type: FDE unsupported, controller: B)`

A special shutdown operation has started. These special shutdown types are used as part of the firmware-update process.

Recommended action:

- No action is required.

236.40

Error

`A Storage Controller received a shutdown command. (special shutdown type: FDE unsupported, controller: B)`

A special shutdown operation has started. These special shutdown types indicate an incompatible feature.

Recommended action:

- Replace the indicated controller module with one that supports the indicated feature.

236.41

Info

`A Storage Controller received a shutdown command. (special shutdown type: Burn-to-Active configuration change, controller: B)`

A special shutdown operation has started. These special shutdown types are used as part of the firmware-update process.

Recommended action:

- No action is required.

236.42

Error

`A Storage Controller received a shutdown command. (special shutdown type: Burn-to-Active configuration change, controller: B)`

A special shutdown operation has started. These special shutdown types indicate an incompatible feature.

Recommended action:

- Replace the indicated controller module with one that supports the indicated feature.

236.43

Info

`A Storage Controller received a shutdown command. (special shutdown type: Configuration change, controller: B)`

A special shutdown operation has started. These special shutdown types are used as part of the firmware-update process.

Recommended action:

- No action is required.

236.44

Error

`A Storage Controller received a shutdown command. (special shutdown type: Configuration change, controller: B)`

A special shutdown operation has started. These special shutdown types indicate an incompatible feature.

Recommended action:

- Replace the indicated controller module with one that supports the indicated feature.

236.45

Info

`A Storage Controller received a shutdown command. (special shutdown type: Restore pool on restart, controller: B)`

A special shutdown operation has started. These special shutdown types are used as part of the firmware-update process.

Recommended action:

- No action is required.

236.46

Error

`A Storage Controller received a shutdown command. (special shutdown type: Restore pool on restart, controller: B)`

A special shutdown operation has started. These special shutdown types indicate an incompatible feature.

Recommended action:

- Replace the indicated controller module with one that supports the indicated feature.

236.47

Info

`A Storage Controller received a shutdown command. (special shutdown type: SAS X2 mode change, controller: B)`

A special shutdown operation has started. These special shutdown types are used as part of the firmware-update process.

Recommended action:

- No action is required.

236.48

Error

```
A Storage Controller received a shutdown command. (special shutdown type: SAS X2 mode change,
controller: B)
```

A special shutdown operation has started. These special shutdown types indicate an incompatible feature.

Recommended action:

- Replace the indicated controller module with one that supports the indicated feature.

236.49

Info

```
A Storage Controller received a shutdown command. (special shutdown type: Pool recovery,
controller: B)
```

A special shutdown operation has started. These special shutdown types are used as part of the firmware-update process.

Recommended action:

- No action is required.

236.50

Error

```
A Storage Controller received a shutdown command. (special shutdown type: Pool recovery,
controller: B)
```

A special shutdown operation has started. These special shutdown types indicate an incompatible feature.

Recommended action:

- Replace the indicated controller module with one that supports the indicated feature.

236.51

Info

```
A Storage Controller received a shutdown command. (special shutdown type: Unknown shutdown
type=<numeric value>, controller: B)
```

A special shutdown operation has started. These special shutdown types are used as part of the firmware-update process.

Recommended action:

- No action is required.

236.52

Error

```
A Storage Controller received a shutdown command. (special shutdown type: Unknown shutdown
type=<numeric value>, controller: B)
```

A special shutdown operation has started. These special shutdown types indicate an incompatible feature.

Recommended action:

- Replace the indicated controller module with one that supports the indicated feature.

236.53

Info

`A Storage Controller received a shutdown command. (special shutdown type: Normal, controller: both)`

A special shutdown operation has started. These special shutdown types are used as part of the firmware-update process.

Recommended action:

• No action is required.

236.54

Error

`A Storage Controller received a shutdown command. (special shutdown type: Normal, controller: both)`

A special shutdown operation has started. These special shutdown types indicate an incompatible feature.

Recommended action:

• Replace the indicated controller module with one that supports the indicated feature.

236.55

Info

`A Storage Controller received a shutdown command. (special shutdown type: SC firmware update, controller: both)`

A special shutdown operation has started. These special shutdown types are used as part of the firmware-update process.

Recommended action:

• No action is required.

236.56

Error

`A Storage Controller received a shutdown command. (special shutdown type: SC firmware update, controller: both)`

A special shutdown operation has started. These special shutdown types indicate an incompatible feature.

Recommended action:

• Replace the indicated controller module with one that supports the indicated feature.

236.57

Info

`A Storage Controller received a shutdown command. (special shutdown type: SC firmware update, no restart, controller: both)`

A special shutdown operation has started. These special shutdown types are used as part of the firmware-update process.

Recommended action:

• No action is required.

236.58

Error

`A Storage Controller received a shutdown command. (special shutdown type: SC firmware update, no restart, controller: both)`

A special shutdown operation has started. These special shutdown types indicate an incompatible feature.

Recommended action:

- Replace the indicated controller module with one that supports the indicated feature.

236.59

Info

`A Storage Controller received a shutdown command. (special shutdown type: CPLD code update, controller: both)`

A special shutdown operation has started. These special shutdown types are used as part of the firmware-update process.

Recommended action:

- No action is required.

236.60

Error

`A Storage Controller received a shutdown command. (special shutdown type: CPLD code update, controller: both)`

A special shutdown operation has started. These special shutdown types indicate an incompatible feature.

Recommended action:

- Replace the indicated controller module with one that supports the indicated feature.

236.61

Info

`A Storage Controller received a shutdown command. (special shutdown type: EC restart, controller: both)`

A special shutdown operation has started. These special shutdown types are used as part of the firmware-update process.

Recommended action:

- No action is required.

236.62

Error

`A Storage Controller received a shutdown command. (special shutdown type: EC restart, controller: both)`

A special shutdown operation has started. These special shutdown types indicate an incompatible feature.

Recommended action:

- Replace the indicated controller module with one that supports the indicated feature.

236.65

Info

A Storage Controller received a shutdown command. (special shutdown type: FDE unsupported, controller: both)

A special shutdown operation has started. These special shutdown types are used as part of the firmware-update process.

Recommended action:

- No action is required.

236.66

Error

A Storage Controller received a shutdown command. (special shutdown type: FDE unsupported, controller: both)

A special shutdown operation has started. These special shutdown types indicate an incompatible feature.

Recommended action:

- Replace the indicated controller module with one that supports the indicated feature.

236.67

Info

A Storage Controller received a shutdown command. (special shutdown type: Burn-to-Active configuration change, controller: both)

A special shutdown operation has started. These special shutdown types are used as part of the firmware-update process.

Recommended action:

- No action is required.

236.68

Error

A Storage Controller received a shutdown command. (special shutdown type: Burn-to-Active configuration change, controller: both)

A special shutdown operation has started. These special shutdown types indicate an incompatible feature.

Recommended action:

- Replace the indicated controller module with one that supports the indicated feature.

236.69

Info

A Storage Controller received a shutdown command. (special shutdown type: Configuration change, controller: both)

A special shutdown operation has started. These special shutdown types are used as part of the firmware-update process.

Recommended action:

- No action is required.

236.70

Error

A Storage Controller received a shutdown command. (special shutdown type: Configuration change, controller: both)

A special shutdown operation has started. These special shutdown types indicate an incompatible feature.

Recommended action:

- Replace the indicated controller module with one that supports the indicated feature.

236.71

Info

A Storage Controller received a shutdown command. (special shutdown type: Restore pool on restart, controller: both)

A special shutdown operation has started. These special shutdown types are used as part of the firmware-update process.

Recommended action:

- No action is required.

236.72

Error

A Storage Controller received a shutdown command. (special shutdown type: Restore pool on restart, controller: both)

A special shutdown operation has started. These special shutdown types indicate an incompatible feature.

Recommended action:

- Replace the indicated controller module with one that supports the indicated feature.

236.73

Info

A Storage Controller received a shutdown command. (special shutdown type: SAS X2 mode change, controller: both)

A special shutdown operation has started. These special shutdown types are used as part of the firmware-update process.

Recommended action:

- No action is required.

236.74

Error

A Storage Controller received a shutdown command. (special shutdown type: SAS X2 mode change, controller: both)

A special shutdown operation has started. These special shutdown types indicate an incompatible feature.

Recommended action:

- Replace the indicated controller module with one that supports the indicated feature.

236.75

Info

`A Storage Controller received a shutdown command. (special shutdown type: Pool recovery, controller: both)`

A special shutdown operation has started. These special shutdown types are used as part of the firmware-update process.

Recommended action:

- No action is required.

236.76

Error

`A Storage Controller received a shutdown command. (special shutdown type: Pool recovery, controller: both)`

A special shutdown operation has started. These special shutdown types indicate an incompatible feature.

Recommended action:

- Replace the indicated controller module with one that supports the indicated feature.

236.77

Info

`A Storage Controller received a shutdown command. (special shutdown type: Unknown shutdown type=<numeric value>, controller: both)`

A special shutdown operation has started. These special shutdown types are used as part of the firmware-update process.

Recommended action:

- No action is required.

236.78

Error

`A Storage Controller received a shutdown command. (special shutdown type: Unknown shutdown type=<numeric value>, controller: both)`

A special shutdown operation has started. These special shutdown types indicate an incompatible feature.

Recommended action:

- Replace the indicated controller module with one that supports the indicated feature.

237 - Firmware update in progress

237.1

Info

`Firmware update progress: The firmware was verified. (from MC: yes, for MC: yes)`

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.2

Info

`Firmware update progress: The firmware was verified. (from MC: yes, for MC: no)`

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.3

Info

`Firmware update progress: The firmware was verified. (from MC: no, for MC: yes)`

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.4

Info

`Firmware update progress: The firmware was verified. (from MC: no, for MC: no)`

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.5

Info

`Firmware update progress: The SC loader was updated. Saved in primary location in flash memory. The firmware is different so it was flashed; flashed successfully.`

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.6

Info

`Firmware update progress: The SC loader was updated. Saved in primary location in flash. The firmware is different so it was flashed; FAILURE while flashing.`

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.7

Info

```
Firmware update progress: The SC loader was updated. Saved in primary location in flash. The
firmware is the same so it was not flashed.
```

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.8

Info

```
Firmware update progress: The SC loader was updated. Saved in secondary location in flash. The
firmware is different so it was flashed; flashed successfully.
```

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.9

Info

```
Firmware update progress: The SC loader was updated. Saved in secondary location in flash. The
firmware is different so it was flashed; FAILURE while flashing.
```

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.10

Info

```
Firmware update progress: The SC loader was updated. Saved in secondary location in flash. The
firmware is the same so it was not flashed.
```

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.11

Info

`Firmware update progress: The SC loader was updated. Saved in both locations in flash. The firmware is different so it was flashed; flashed successfully.`

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.12

Info

`Firmware update progress: The SC loader was updated. Saved in both locations in flash. The firmware is different so it was flashed; FAILURE while flashing.`

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.13

Info

`Firmware update progress: The SC loader was updated. Saved in both locations in flash. The firmware is the same so it was not flashed.`

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.14

Info

`Firmware update progress: The memory-controller FPGA was updated. Saved in primary location in flash. The firmware is different so it was flashed; flashed successfully.`

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.15

Info

`Firmware update progress: The memory-controller FPGA was updated. Saved in primary location in flash. The firmware is different so it was flashed; FAILURE while flashing.`

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.16

Info

`Firmware update progress: The memory-controller FPGA was updated. Saved in primary location in flash. The firmware is the same so it was not flashed.`

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.17

Info

`Firmware update progress: The memory-controller FPGA was updated. Saved in secondary location in flash. The firmware is different so it was flashed; flashed successfully.`

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.18

Info

`Firmware update progress: The memory-controller FPGA was updated. Saved in secondary location in flash. The firmware is different so it was flashed; FAILURE while flashing.`

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.19

Info

`Firmware update progress: The memory-controller FPGA was updated. Saved in secondary location in flash. The firmware is the same so it was not flashed.`

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.20

Info

`Firmware update progress: The memory-controller FPGA was updated. Saved in both locations in flash. The firmware is different so it was flashed; flashed successfully.`

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.21

Info

`Firmware update progress: The memory-controller FPGA was updated. Saved in both locations in flash. The firmware is different so it was flashed; FAILURE while flashing.`

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.22

Info

`Firmware update progress: The memory-controller FPGA was updated. Saved in both locations in flash. The firmware is the same so it was not flashed.`

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.23

Info

```
Firmware update progress: The SC app was updated. Saved in primary location in flash. The
firmware is different so it was flashed; flashed successfully.
```

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.24

Info

```
Firmware update progress: The SC app was updated. Saved in primary location in flash. The
firmware is different so it was flashed; FAILURE while flashing.
```

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.25

Info

```
Firmware update progress: The SC app was updated. Saved in primary location in flash. The
firmware is the same so it was not flashed.
```

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.26

Info

```
Firmware update progress: The SC app was updated. Saved in secondary location in flash. The
firmware is different so it was flashed; flashed successfully.
```

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.27

Info

```
Firmware update progress: The SC app was updated. Saved in secondary location in flash. The
firmware is different so it was flashed; FAILURE while flashing.
```

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.28

Info

```
Firmware update progress: The SC app was updated. Saved in secondary location in flash. The
firmware is the same so it was not flashed.
```

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.29

Info

```
Firmware update progress: The SC app was updated. Saved in both locations in flash. The firmware
is different so it was flashed; flashed successfully.
```

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.30

Info

```
Firmware update progress: The SC app was updated. Saved in both locations in flash. The firmware
is different so it was flashed; FAILURE while flashing.
```

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.31

Info

`Firmware update progress: The SC app was updated. Saved in both locations in flash. The firmware is the same so it was not flashed.`

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.32

Info

`Firmware update progress: The manufacturing firmware was updated. Saved in primary location in flash. The firmware is different so it was flashed; flashed successfully.`

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.33

Info

`Firmware update progress: The manufacturing firmware was updated. The SC loader was updated. Saved in primary location in flash. The firmware is different so it was flashed; FAILURE while flashing.`

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.34

Info

`Firmware update progress: The manufacturing firmware was updated. Saved in primary location in flash. The firmware is the same so it was not flashed.`

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.35

Info

`Firmware update progress: The manufacturing firmware was updated. Saved in secondary location in flash. The firmware is different so it was flashed; flashed successfully.`

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.36

Info

`Firmware update progress: The manufacturing firmware was updated. Saved in secondary location in flash. The firmware is different so it was flashed; FAILURE while flashing.`

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.37

Info

`Firmware update progress: The manufacturing firmware was updated. Saved in secondary location in flash. The firmware is the same so it was not flashed.`

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.38

Info

`Firmware update progress: The manufacturing firmware was updated. Saved in both locations in flash. The firmware is different so it was flashed; flashed successfully.`

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.39

Info

`Firmware update progress: The manufacturing firmware was updated. Saved in both locations in flash. The firmware is different so it was flashed; FAILURE while flashing.`

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.40

Info

`Firmware update progress: The manufacturing firmware was updated. Saved in both locations in flash. The firmware is the same so it was not flashed.`

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.41

Info

`Firmware update progress: Unknown. Saved in primary location in flash. The firmware is different so it was flashed; flashed successfully.`

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.42

Info

`Firmware update progress: Unknown. Saved in primary location in flash. The firmware is different so it was flashed; FAILURE while flashing.`

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.43

Info

```
Firmware update progress: Unknown. Saved in primary location in flash. The firmware is the same
so it was not flashed.
```

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.44

Info

```
Firmware update progress: Unknown. Saved in secondary location in flash. The firmware is
different so it was flashed; flashed successfully.
```

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.45

Info

```
Firmware update progress: Unknown. Saved in secondary location in flash. The firmware is
different so it was flashed; FAILURE while flashing.
```

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.46

Info

```
Firmware update progress: Unknown. Saved in secondary location in flash. The firmware is the
same so it was not flashed.
```

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.47

Info

`Firmware update progress: Unknown. Saved in both locations in flash. The firmware is different so it was flashed; flashed successfully.`

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.48

Info

`Firmware update progress: Unknown. Saved in both locations in flash. The firmware is different so it was flashed; FAILURE while flashing.`

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.49

Info

`Firmware update progress: Unknown. Saved in both locations in flash. The firmware is the same so it was not flashed.`

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.50

Info

`Firmware update progress: The MRC firmware was updated. Saved in primary location in flash. The firmware is different so it was flashed; flashed successfully.`

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.51

Info

```
Firmware update progress: The MRC firmware was updated. Saved in primary location in flash. The
firmware is different so it was flashed; FAILURE while flashing.
```

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.52

Info

```
Firmware update progress: The MRC firmware was updated. Saved in primary location in flash. The
firmware is the same so it was not flashed.
```

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.53

Info

```
Firmware update progress: The MRC firmware was updated. Saved in secondary location in flash.
The firmware is different so it was flashed; flashed successfully.
```

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.54

Info

```
Firmware update progress: The MRC firmware was updated. Saved in secondary location in flash.
The firmware is different so it was flashed; FAILURE while flashing.
```

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.55

Info

`Firmware update progress: The MRC firmware was updated. Saved in secondary location in flash. The firmware is the same so it was not flashed.`

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.56

Info

`Firmware update progress: The MRC firmware was updated. Saved in both locations in flash. The firmware is different so it was flashed; flashed successfully.`

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.57

Info

`Firmware update progress: The MRC firmware was updated. Saved in both locations in flash. The firmware is different so it was flashed; FAILURE while flashing.`

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.58

Info

`Firmware update progress: The MRC firmware was updated. Saved in both locations in flash. The firmware is the same so it was not flashed.`

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.59

Info

`Firmware update progress: No changes needed. Saved in primary location in flash. The firmware`
`is different so it was flashed; flashed successfully.`

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.60

Info

`Firmware update progress: No changes needed. Saved in primary location in flash. The firmware`
`is different so it was flashed; FAILURE while flashing.`

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.61

Info

`Firmware update progress: No changes needed. Saved in primary location in flash. The firmware`
`is the same so it was not flashed.`

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.62

Info

`Firmware update progress: No changes needed. Saved in secondary location in flash. The firmware`
`is different so it was flashed; flashed successfully.`

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.63

Info

`Firmware update progress: No changes needed. Saved in secondary location in flash. The firmware is different so it was flashed; FAILURE while flashing.`

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.64

Info

`Firmware update progress: No changes needed. Saved in secondary location in flash. The firmware is the same so it was not flashed.`

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.65

Info

`Firmware update progress: No changes needed. Saved in both locations in flash. The firmware is different so it was flashed; flashed successfully.`

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.66

Info

`Firmware update progress: No changes needed. Saved in both locations in flash. The firmware is different so it was flashed; FAILURE while flashing.`

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.67

Info

`Firmware update progress: No changes needed. Saved in both locations in flash. The firmware is the same so it was not flashed.`

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.68

Error

`Firmware update progress: System health is insufficient to support firmware update.`

A firmware update attempt was aborted because of either general system health issue(s), or unwritable cache data that would be lost during a firmware update.

Recommended action:

- Resolve before retrying a firmware update. For health issues, issue the CLI 'show system' command to determine the specific health issue(s). For unwritten cache data, use the CLI 'show unwritable-cache' command.

237.69

Info

`Firmware update progress: System health is sufficient to support firmware update.`

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.77

Info

`Firmware update progress: Firmware update cannot proceed. System has unwritable cache data present.`

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.78

Info

`Firmware update progress: Firmware update cannot proceed. Unable to determine if unwritable`
`cache data is present.`

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

237.79

Info

`Firmware update progress: The MC flash was updated.`

A firmware update has started and is in progress. This event provides details of the steps in a firmware-update operation that may be of interest if you have problems updating firmware.

Recommended action:

- No action is required.

238 - Invalid license

238.1

Warning

`License data was not written because it was an invalid license.`

An attempt to install a licensed feature failed due to an invalid license.

Recommended action:

- Check the license for what is allowed for the platform, make corrections as appropriate, and reinstall.

239 - Memory card write timeout

239.1

Warning

`A timeout occurred while writing to the memory card.`

Recommended action:

- Restart the Storage Controller that logged this event.
- If this event is logged again, shut down the Storage Controller and replace the controller module.

240 - Memory card error detected

240.1

Warning

`Error detected in the memory card. (p1: <numeric value>, p2: <numeric value>, p3: <numeric value>)`

Recommended action:

- Restart the Storage Controller that logged this event.
- If this event is logged again, shut down the Storage Controller and replace the controller module.

241 - AWT trigger

241.1

Info

`Auto-write-through trigger event: memory card recovered.`

The auto-write-through trigger event that caused event 242 to be logged has been resolved.

Recommended action:

- No action is required.

242 - AWT trigger

242.1

Error

`Auto-write-through trigger event: memory card failed.`

This change met a condition to trigger the auto-write-through feature, which has disabled write-back cache and put the system in write-through mode. When the fault is resolved, event 241 is logged to indicate that write-back mode has been restored.

Recommended action:

- If event 241 has not been logged since this event was logged, the memory card probably does not have health of OK and the cause should be investigated. Another memory card event was probably logged at approximately the same time as this event (such as event 239, 240, or 481). See the recommended actions for that event.

243 - Controller enclosure changed

243.1

Info

`The controller enclosure was changed. (new SN: <serial number>, old SN: <serial number>)`

A new controller enclosure has been detected. This happens when a controller module is moved from one enclosure to another and the controller detects that the midplane WWN is different from the WWN it has in its local flash.

Recommended action:

- No action is required.

245 - Disk channel error

245.1

Info

A disk-channel target device is not responding to SCSI discovery commands. (channel: <channel index>, ID: <device identifier>, type: SATA)

Recommended action:

- Check the indicated target device for bad hardware or bad cable, then initiate a rescan.

245.2

Info

A disk-channel target device is not responding to SCSI discovery commands. (channel: <channel index>, ID: <device identifier>, type: SAS)

Recommended action:

- Check the indicated target device for bad hardware or bad cable, then initiate a rescan.

246 - Coin battery failure

246.1

Warning

The coin battery is missing, has reached its end of life, or is not making a good connection.

The battery provides backup power for the real-time (date/time) clock. In the event of a power failure, the date and time will revert to 1980-01-01 00:00:00.

Recommended action:

- Replace the controller module that logged this event.

247 - FRU-ID read failure

247.1

Warning

The FRU-ID SEEPROM cannot be read from a FRU. FRU-ID data might not be programmed. (FRU type: Controller module A) (<Baseplane Enclosure>, WWN: <World Wide Name>)

FRU ID data includes the worldwide name, serial numbers, firmware and hardware versions, branding information, etc. This event is logged once each time a Storage Controller (SC) is started for each FRU that is not programmed.

Recommended action:

- Return the FRU to have its FRU ID data reprogrammed.

247.2

Warning

```
The FRU-ID SEEPROM cannot be read from a FRU. FRU-ID data might not be programmed. (FRU type:
Controller module B) (<Baseplane Enclosure>, WWN: <World Wide Name>)
```

FRU ID data includes the worldwide name, serial numbers, firmware and hardware versions, branding information, etc. This event is logged once each time a Storage Controller (SC) is started for each FRU that is not programmed.

Recommended action:

- Return the FRU to have its FRU ID data reprogrammed.

247.5

Warning

```
The FRU-ID SEEPROM cannot be read from a FRU. FRU-ID data might not be programmed. (FRU type:
PSU, Left) (<Baseplane Enclosure>, WWN: <World Wide Name>)
```

FRU ID data includes the worldwide name, serial numbers, firmware and hardware versions, branding information, etc. This event is logged once each time a Storage Controller (SC) is started for each FRU that is not programmed.

Recommended action:

- Return the FRU to have its FRU ID data reprogrammed.

247.6

Warning

```
The FRU-ID SEEPROM cannot be read from a FRU. FRU-ID data might not be programmed. (FRU type:
PSU, Right) (<Baseplane Enclosure>, WWN: <World Wide Name>)
```

FRU ID data includes the worldwide name, serial numbers, firmware and hardware versions, branding information, etc. This event is logged once each time a Storage Controller (SC) is started for each FRU that is not programmed.

Recommended action:

- Return the FRU to have its FRU ID data reprogrammed.

247.7

Warning

```
The FRU-ID SEEPROM cannot be read from a FRU. FRU-ID data might not be programmed. (FRU type:
PSU, Left) (<Baseplane Enclosure>, WWN: <World Wide Name>)
```

FRU ID data includes the worldwide name, serial numbers, firmware and hardware versions, branding information, etc. This event is logged once each time a Storage Controller (SC) is started for each FRU that is not programmed.

Recommended action:

- Return the FRU to have its FRU ID data reprogrammed.

247.8

Warning

The FRU-ID SEEPROM cannot be read from a FRU. FRU-ID data might not be programmed. (FRU type: PSU, Right) (<Baseplane Enclosure>, WWN: <World Wide Name>)

FRU ID data includes the worldwide name, serial numbers, firmware and hardware versions, branding information, etc. This event is logged once each time a Storage Controller (SC) is started for each FRU that is not programmed.

Recommended action:

- Return the FRU to have its FRU ID data reprogrammed.

247.9

Warning

The FRU-ID SEEPROM cannot be read from a FRU. FRU-ID data might not be programmed. (FRU type: Midplane) (<Baseplane Enclosure>, WWN: <World Wide Name>)

FRU ID data includes the worldwide name, serial numbers, firmware and hardware versions, branding information, etc. This event is logged once each time a Storage Controller (SC) is started for each FRU that is not programmed.

Recommended action:

- Return the FRU to have its FRU ID data reprogrammed.

247.10

Warning

The FRU-ID SEEPROM cannot be read from a FRU. FRU-ID data might not be programmed. (FRU type: Disk drive) (<Baseplane Enclosure>, WWN: <World Wide Name>)

FRU ID data includes the worldwide name, serial numbers, firmware and hardware versions, branding information, etc. This event is logged once each time a Storage Controller (SC) is started for each FRU that is not programmed.

Recommended action:

- Return the FRU to have its FRU ID data reprogrammed.

247.11

Warning

The FRU-ID SEEPROM cannot be read from a FRU. FRU-ID data might not be programmed. (FRU type: Fan module, Left) (<Baseplane Enclosure>, WWN: <World Wide Name>)

FRU ID data includes the worldwide name, serial numbers, firmware and hardware versions, branding information, etc. This event is logged once each time a Storage Controller (SC) is started for each FRU that is not programmed.

Recommended action:

- Return the FRU to have its FRU ID data reprogrammed.

247.12

Warning

```
The FRU-ID SEEPROM cannot be read from a FRU. FRU-ID data might not be programmed. (FRU type:
Fan module, Right) (<Baseplane Enclosure>, WWN: <World Wide Name>)
```

FRU ID data includes the worldwide name, serial numbers, firmware and hardware versions, branding information, etc. This event is logged once each time a Storage Controller (SC) is started for each FRU that is not programmed.

Recommended action:

- Return the FRU to have its FRU ID data reprogrammed.

247.13

Warning

```
The FRU-ID SEEPROM cannot be read from a FRU. FRU-ID data might not be programmed. (FRU type:
Controller A memory card) (<Baseplane Enclosure>, WWN: <World Wide Name>)
```

FRU ID data includes the worldwide name, serial numbers, firmware and hardware versions, branding information, etc. This event is logged once each time a Storage Controller (SC) is started for each FRU that is not programmed.

Recommended action:

- Return the FRU to have its FRU ID data reprogrammed.

247.14

Warning

```
The FRU-ID SEEPROM cannot be read from a FRU. FRU-ID data might not be programmed. (FRU type:
Controller B memory card) (<Baseplane Enclosure>, WWN: <World Wide Name>)
```

FRU ID data includes the worldwide name, serial numbers, firmware and hardware versions, branding information, etc. This event is logged once each time a Storage Controller (SC) is started for each FRU that is not programmed.

Recommended action:

- Return the FRU to have its FRU ID data reprogrammed.

247.15

Warning

```
The FRU-ID SEEPROM cannot be read from a FRU. FRU-ID data might not be programmed. (FRU type:
Undefined) (<Baseplane Enclosure>, WWN: <World Wide Name>)
```

FRU ID data includes the worldwide name, serial numbers, firmware and hardware versions, branding information, etc. This event is logged once each time a Storage Controller (SC) is started for each FRU that is not programmed.

Recommended action:

- Return the FRU to have its FRU ID data reprogrammed.

247.16

Warning

The FRU-ID SEEPROM cannot be read from a FRU. FRU-ID data might not be programmed. (FRU type: Unknown) (<Baseplane Enclosure>, WWN: <World Wide Name>)

FRU ID data includes the worldwide name, serial numbers, firmware and hardware versions, branding information, etc. This event is logged once each time a Storage Controller (SC) is started for each FRU that is not programmed.

Recommended action:

- Return the FRU to have its FRU ID data reprogrammed.

247.17

Warning

The FRU-ID SEEPROM cannot be read from a FRU. FRU-ID data might not be programmed. (FRU type: Drawer, Left) (<Baseplane Enclosure>, WWN: <World Wide Name>)

FRU ID data includes the worldwide name, serial numbers, firmware and hardware versions, branding information, etc. This event is logged once each time a Storage Controller (SC) is started for each FRU that is not programmed.

Recommended action:

- Return the FRU to have its FRU ID data reprogrammed.

247.18

Warning

The FRU-ID SEEPROM cannot be read from a FRU. FRU-ID data might not be programmed. (FRU type: Drawer, Middle) (<Baseplane Enclosure>, WWN: <World Wide Name>)

FRU ID data includes the worldwide name, serial numbers, firmware and hardware versions, branding information, etc. This event is logged once each time a Storage Controller (SC) is started for each FRU that is not programmed.

Recommended action:

- Return the FRU to have its FRU ID data reprogrammed.

247.19

Warning

The FRU-ID SEEPROM cannot be read from a FRU. FRU-ID data might not be programmed. (FRU type: Drawer, Right) (<Baseplane Enclosure>, WWN: <World Wide Name>)

FRU ID data includes the worldwide name, serial numbers, firmware and hardware versions, branding information, etc. This event is logged once each time a Storage Controller (SC) is started for each FRU that is not programmed.

Recommended action:

- Return the FRU to have its FRU ID data reprogrammed.

247.20

Warning

```
The FRU-ID SEEPROM cannot be read from a FRU. FRU-ID data might not be programmed. (FRU type:
Top drawer sideplane, Left) (<Baseplane Enclosure>, WWN: <World Wide Name>)
```

FRU ID data includes the worldwide name, serial numbers, firmware and hardware versions, branding information, etc. This event is logged once each time a Storage Controller (SC) is started for each FRU that is not programmed.

Recommended action:

- Return the FRU to have its FRU ID data reprogrammed.

247.21

Warning

```
The FRU-ID SEEPROM cannot be read from a FRU. FRU-ID data might not be programmed. (FRU type:
Top drawer sideplane, Right) (<Baseplane Enclosure>, WWN: <World Wide Name>)
```

FRU ID data includes the worldwide name, serial numbers, firmware and hardware versions, branding information, etc. This event is logged once each time a Storage Controller (SC) is started for each FRU that is not programmed.

Recommended action:

- Return the FRU to have its FRU ID data reprogrammed.

247.22

Warning

```
The FRU-ID SEEPROM cannot be read from a FRU. FRU-ID data might not be programmed. (FRU type:
Bottom drawer sideplane, Left) (<Baseplane Enclosure>, WWN: <World Wide Name>)
```

FRU ID data includes the worldwide name, serial numbers, firmware and hardware versions, branding information, etc. This event is logged once each time a Storage Controller (SC) is started for each FRU that is not programmed.

Recommended action:

- Return the FRU to have its FRU ID data reprogrammed.

247.23

Warning

```
The FRU-ID SEEPROM cannot be read from a FRU. FRU-ID data might not be programmed. (FRU type:
Bottom drawer sideplane, Right) (<Baseplane Enclosure>, WWN: <World Wide Name>)
```

FRU ID data includes the worldwide name, serial numbers, firmware and hardware versions, branding information, etc. This event is logged once each time a Storage Controller (SC) is started for each FRU that is not programmed.

Recommended action:

- Return the FRU to have its FRU ID data reprogrammed.

247.24

Warning

The FRU-ID SEEPROM cannot be read from a FRU. FRU-ID data might not be programmed. (FRU type: Fan Module 0) (<Baseplane Enclosure>, WWN: <World Wide Name>)

FRU ID data includes the worldwide name, serial numbers, firmware and hardware versions, branding information, etc. This event is logged once each time a Storage Controller (SC) is started for each FRU that is not programmed.

Recommended action:

- Return the FRU to have its FRU ID data reprogrammed.

247.25

Warning

The FRU-ID SEEPROM cannot be read from a FRU. FRU-ID data might not be programmed. (FRU type: Fan Module 1) (<Baseplane Enclosure>, WWN: <World Wide Name>)

FRU ID data includes the worldwide name, serial numbers, firmware and hardware versions, branding information, etc. This event is logged once each time a Storage Controller (SC) is started for each FRU that is not programmed.

Recommended action:

- Return the FRU to have its FRU ID data reprogrammed.

247.26

Warning

The FRU-ID SEEPROM cannot be read from a FRU. FRU-ID data might not be programmed. (FRU type: Fan Module 2) (<Baseplane Enclosure>, WWN: <World Wide Name>)

FRU ID data includes the worldwide name, serial numbers, firmware and hardware versions, branding information, etc. This event is logged once each time a Storage Controller (SC) is started for each FRU that is not programmed.

Recommended action:

- Return the FRU to have its FRU ID data reprogrammed.

247.27

Warning

The FRU-ID SEEPROM cannot be read from a FRU. FRU-ID data might not be programmed. (FRU type: Fan Module 3) (<Baseplane Enclosure>, WWN: <World Wide Name>)

FRU ID data includes the worldwide name, serial numbers, firmware and hardware versions, branding information, etc. This event is logged once each time a Storage Controller (SC) is started for each FRU that is not programmed.

Recommended action:

- Return the FRU to have its FRU ID data reprogrammed.

247.28

Warning

```
The FRU-ID SEEPROM cannot be read from a FRU. FRU-ID data might not be programmed. (FRU type:
Fan Module 4) (<Baseplane Enclosure>, WWN: <World Wide Name>)
```

FRU ID data includes the worldwide name, serial numbers, firmware and hardware versions, branding information, etc. This event is logged once each time a Storage Controller (SC) is started for each FRU that is not programmed.

Recommended action:

- Return the FRU to have its FRU ID data reprogrammed.

255 - Host Interface Module mismatch

255.1

Info

```
Host Interface Module (HIM) mismatch. (local HIM model: <numeric value>, remote HIM model:
<numeric value>)
```

Recommended action:

- No action is required.

259 - In-band CAPI disabled

259.1

Info

```
In-band CAPI commands were disabled.
```

Recommended action:

- No action is required.

260 - In-band CAPI enabled

260.1

Info

```
In-band CAPI commands were enabled.
```

Recommended action:

- No action is required.

261 - In-band SES disabled

261.1

Info

```
In-band SES commands were disabled.
```

Recommended action:

- No action is required.

262 - In-band SES enabled

262.1

Info

`In-band SES commands were enabled.`

Recommended action:

- No action is required.

263 - Spare disk missing

263.1

Warning

`A spare disk drive is missing. It was removed or it is not responding. (disk: channel: <channel index>, ID: <numeric value>, SN: <serial number>, enclosure: <enclosure number>, slot: <slot number>)`

Recommended action:

- Replace the disk with one of the same type (SSD, enterprise SAS, or midline SAS) and the same or greater capacity.
- Configure the disk as a spare.

269 - Partner firmware update in progress

269.1

Info

`Partner Firmware Update progress: <text> (info: p1: <numeric value>, p2: <numeric value>, p3: <numeric value>, p4: <numeric value>)`

A partner firmware upgrade attempt aborted because of either general system health issue(s) or unwritable cache data that would be lost during a firmware update.

Recommended action:

- You must resolve this condition before the firmware update will proceed. Log into the system and run the CLI 'show system' command to identify unhealthy components and find recommendations for restoring system health. The 'check firmware-upgrade-health' command can be used to verify that the system is ready for firmware upgrade. For unwritten cache data, use the 'show unwritable-cache' command.

270 - IP data configuration error

270.1

Warning

`Persistent IP data read/write error. <detailed error information> (error code: <error code>) (status: <text>) (host port: <channel index>)`

Either there was a problem reading or writing the persistent IP data from the FRU ID SEEPROM, or invalid data was read from the FRU ID SEEPROM.

Recommended action:

- Check the IP settings (including iSCSI host-port IP settings for an iSCSI system), and update them if they are incorrect.

270.2

Warning

```
Persistent IP data read/write error. (status: <text>) (host port: <channel index>)
```

Either there was a problem reading or writing the persistent IP data from the FRU ID SEEPROM, or invalid data was read from the FRU ID SEEPROM.

Recommended action:

- Check the IP settings (including iSCSI host-port IP settings for an iSCSI system), and update them if they are incorrect.

270.3

Warning

```
Persistent IP data read/write error. <detailed error information> (error code: <error code>)
(status: <text>)
```

Either there was a problem reading or writing the persistent IP data from the FRU ID SEEPROM, or invalid data was read from the FRU ID SEEPROM.

Recommended action:

- Check the IP settings (including iSCSI host-port IP settings for an iSCSI system), and update them if they are incorrect.

270.4

Warning

```
Persistent IP data read/write error. (status: <text>)
```

Either there was a problem reading or writing the persistent IP data from the FRU ID SEEPROM, or invalid data was read from the FRU ID SEEPROM.

Recommended action:

- Check the IP settings (including iSCSI host-port IP settings for an iSCSI system), and update them if they are incorrect.

271 - MAC address changed

271.1

Info

```
The controller could not obtain its serial number from its FRU-ID SEEPROM. It is using the
controller's serial number from its flash for its MAC address.
```

The storage system could not get a valid serial number from the controller's FRU ID SEEPROM, either because it couldn't read the FRU ID data, or because the data in it isn't valid or hasn't been programmed. Therefore, the MAC address is derived by using the controller's serial number from flash. This event is only logged one time during bootup.

Recommended action:

- No action is required.

273 - PHY isolation

273.1

Info

`PHY fault isolation was enabled. (enclosure: <enclosure number>, module: A)`

PHY fault isolation has been enabled or disabled by a user for the indicated enclosure and controller module.

Recommended action:

• No action is required.

273.2

Info

`PHY fault isolation was enabled. (enclosure: <enclosure number>, module: B)`

PHY fault isolation has been enabled or disabled by a user for the indicated enclosure and controller module.

Recommended action:

• No action is required.

273.3

Info

`PHY fault isolation was disabled. (enclosure: <enclosure number>, module: A)`

PHY fault isolation has been enabled or disabled by a user for the indicated enclosure and controller module.

Recommended action:

• No action is required.

273.4

Info

`PHY fault isolation was disabled. (enclosure: <enclosure number>, module: B)`

PHY fault isolation has been enabled or disabled by a user for the indicated enclosure and controller module.

Recommended action:

• No action is required.

274 - PHY disabled

274.1

Warning

`A PHY was disabled. (enclosure: <enclosure number>, module (disabled path to this disk): <text>, drawer: <drawer number>, disk slot: <numeric value>, reason: <text>)`

The indicated PHY has been disabled, either automatically or by a user. Drive PHYs are automatically disabled for empty disk slots or if a problem is detected. The following reasons indicate a likely hardware fault:

- "Disabled because of error count interrupts"
- "Disabled because of excessive PHY change counts"
- "PHY is ready but did not pass COMINIT"

Recommended action:

- If none of the reasons listed under Additional Information is indicated, no action is required.
- If any of the reasons listed under Additional Information is indicated and the event occurs shortly after the storage system is powered up, do the following:
  - Shut down the Storage Controllers. Then turn off the power for the indicated enclosure, wait a few seconds, and turn it back on.
  - If the problem recurs and the event message identifies a disk slot, replace the disk in that slot.
  - If the problem recurs and the event message identifies a module, do the following:
    - If the indicated PHY type is Egress, replace the cable in the module's egress port.
    - If the indicated PHY type is Ingress, replace the cable in the module's ingress port.
    - For other indicated PHY types or if replacing the cable does not fix the problem, replace the indicated module.
  - If the problem persists, check for other events that may indicate faulty hardware, such as an event indicating an over-temperature condition or power supply fault, and follow the recommended actions for those events.
  - If the problem persists, the fault may be in the enclosure midplane. Replace the chassis FRU.
- If any of the reasons listed under Additional Information is indicated and this event is logged shortly after a failover, user-initiated rescan, or restart, do the following:
  - If the event message identifies a disk slot, reseat the disk in that slot.
  - If the problem persists after reseating the disk, replace the disk.
  - If the event message identifies a module, do the following:
    - If the indicated PHY type is Egress, replace the cable in the module's egress port.
    - If the indicated PHY type is Ingress, replace the cable in the module's ingress port.
    - For other indicated PHY types or if replacing the cable does not fix the problem, replace the indicated module.
  - If the problem persists, check for other events that may indicate faulty hardware, such as an event indicating an over-temperature condition or power supply fault, and follow the recommended actions for those events.
  - If the problem persists, the fault may be in the enclosure midplane. Replace the chassis FRU.

274.2

Warning

```
A PHY was disabled. (enclosure: <enclosure number>, module: <text>, drawer: <drawer number>,
PHY: <numeric value>, PHY type: <text>, reason: <text>)
```

The indicated PHY has been disabled, either automatically or by a user. Drive PHYs are automatically disabled for empty disk slots or if a problem is detected. The following reasons indicate a likely hardware fault:

- "Disabled because of error count interrupts"
- "Disabled because of excessive PHY change counts"
- "PHY is ready but did not pass COMINIT"

Recommended action:

- If none of the reasons listed under Additional Information is indicated, no action is required.
- If any of the reasons listed under Additional Information is indicated and the event occurs shortly after the storage system is powered up, do the following:
  - Shut down the Storage Controllers. Then turn off the power for the indicated enclosure, wait a few seconds, and turn it back on.
  - If the problem recurs and the event message identifies a disk slot, replace the disk in that slot.
  - If the problem recurs and the event message identifies a module, do the following:
    - If the indicated PHY type is Egress, replace the cable in the module's egress port.
    - If the indicated PHY type is Ingress, replace the cable in the module's ingress port.
    - For other indicated PHY types or if replacing the cable does not fix the problem, replace the indicated module.
  - If the problem persists, check for other events that may indicate faulty hardware, such as an event indicating an over-temperature condition or power supply fault, and follow the recommended actions for those events.
  - If the problem persists, the fault may be in the enclosure midplane. Replace the chassis FRU.
- If any of the reasons listed under Additional Information is indicated and this event is logged shortly after a failover, user-initiated rescan, or restart, do the following:
  - If the event message identifies a disk slot, reseat the disk in that slot.
  - If the problem persists after reseating the disk, replace the disk.
  - If the event message identifies a module, do the following:
    - If the indicated PHY type is Egress, replace the cable in the module's egress port.
    - If the indicated PHY type is Ingress, replace the cable in the module's ingress port.
    - For other indicated PHY types or if replacing the cable does not fix the problem, replace the indicated module.
  - If the problem persists, check for other events that may indicate faulty hardware, such as an event indicating an over-temperature condition or power supply fault, and follow the recommended actions for those events.
  - If the problem persists, the fault may be in the enclosure midplane. Replace the chassis FRU.

274.3

Warning

```
A PHY was disabled. (enclosure: <enclosure number>, module (disabled path to this disk):
<text>, disk slot: <numeric value>, reason: <text>)
```

The indicated PHY has been disabled, either automatically or by a user. Drive PHYs are automatically disabled for empty disk slots or if a problem is detected. The following reasons indicate a likely hardware fault:

- "Disabled because of error count interrupts"
- "Disabled because of excessive PHY change counts"
- "PHY is ready but did not pass COMINIT"

Recommended action:

- If none of the reasons listed under Additional Information is indicated, no action is required.
- If any of the reasons listed under Additional Information is indicated and the event occurs shortly after the storage system is powered up, do the following:
  - Shut down the Storage Controllers. Then turn off the power for the indicated enclosure, wait a few seconds, and turn it back on.
  - If the problem recurs and the event message identifies a disk slot, replace the disk in that slot.
  - If the problem recurs and the event message identifies a module, do the following:
    - If the indicated PHY type is Egress, replace the cable in the module's egress port.
    - If the indicated PHY type is Ingress, replace the cable in the module's ingress port.
    - For other indicated PHY types or if replacing the cable does not fix the problem, replace the indicated module.
  - If the problem persists, check for other events that may indicate faulty hardware, such as an event indicating an over-temperature condition or power supply fault, and follow the recommended actions for those events.
  - If the problem persists, the fault may be in the enclosure midplane. Replace the chassis FRU.
- If any of the reasons listed under Additional Information is indicated and this event is logged shortly after a failover, user-initiated rescan, or restart, do the following:
  - If the event message identifies a disk slot, reseat the disk in that slot.
  - If the problem persists after reseating the disk, replace the disk.
  - If the event message identifies a module, do the following:
    - If the indicated PHY type is Egress, replace the cable in the module's egress port.
    - If the indicated PHY type is Ingress, replace the cable in the module's ingress port.
    - For other indicated PHY types or if replacing the cable does not fix the problem, replace the indicated module.
  - If the problem persists, check for other events that may indicate faulty hardware, such as an event indicating an over-temperature condition or power supply fault, and follow the recommended actions for those events.
  - If the problem persists, the fault may be in the enclosure midplane. Replace the chassis FRU.

274.4
Warning

```
A PHY was disabled. (enclosure: <enclosure number>, module: <text>, PHY: <numeric value>, PHY
type: <text>, reason: <text>)
```

The indicated PHY has been disabled, either automatically or by a user. Drive PHYs are automatically disabled for empty disk slots or if a problem is detected. The following reasons indicate a likely hardware fault:

- "Disabled because of error count interrupts"
- "Disabled because of excessive PHY change counts"
- "PHY is ready but did not pass COMINIT"

Recommended action:

- If none of the reasons listed under Additional Information is indicated, no action is required.
- If any of the reasons listed under Additional Information is indicated and the event occurs shortly after the storage system is powered up, do the following:
    - Shut down the Storage Controllers. Then turn off the power for the indicated enclosure, wait a few seconds, and turn it back on.
    - If the problem recurs and the event message identifies a disk slot, replace the disk in that slot.
    - If the problem recurs and the event message identifies a module, do the following:
        - If the indicated PHY type is Egress, replace the cable in the module's egress port.
        - If the indicated PHY type is Ingress, replace the cable in the module's ingress port.
        - For other indicated PHY types or if replacing the cable does not fix the problem, replace the indicated module.
    - If the problem persists, check for other events that may indicate faulty hardware, such as an event indicating an over-temperature condition or power supply fault, and follow the recommended actions for those events.
    - If the problem persists, the fault may be in the enclosure midplane. Replace the chassis FRU.
- If any of the reasons listed under Additional Information is indicated and this event is logged shortly after a failover, user-initiated rescan, or restart, do the following:
    - If the event message identifies a disk slot, reseat the disk in that slot.
    - If the problem persists after reseating the disk, replace the disk.
    - If the event message identifies a module, do the following:
        - If the indicated PHY type is Egress, replace the cable in the module's egress port.
        - If the indicated PHY type is Ingress, replace the cable in the module's ingress port.
        - For other indicated PHY types or if replacing the cable does not fix the problem, replace the indicated module.
    - If the problem persists, check for other events that may indicate faulty hardware, such as an event indicating an over-temperature condition or power supply fault, and follow the recommended actions for those events.
    - If the problem persists, the fault may be in the enclosure midplane. Replace the chassis FRU.

274.5

Warning

```
A PHY was disabled. (enclosure: <enclosure number>, module (disabled path to this disk):
<text>, baseplane: <Baseplane Number>, disk slot: <numeric value>, reason: <text>)
```

The indicated PHY has been disabled, either automatically or by a user. Drive PHYs are automatically disabled for empty disk slots or if a problem is detected. The following reasons indicate a likely hardware fault:

- "Disabled because of error count interrupts"
- "Disabled because of excessive PHY change counts"
- "PHY is ready but did not pass COMINIT"

Recommended action:

- If none of the reasons listed under Additional Information is indicated, no action is required.
- If any of the reasons listed under Additional Information is indicated and the event occurs shortly after the storage system is powered up, do the following:
  - Shut down the Storage Controllers. Then turn off the power for the indicated enclosure, wait a few seconds, and turn it back on.
  - If the problem recurs and the event message identifies a disk slot, replace the disk in that slot.
  - If the problem recurs and the event message identifies a module, do the following:
    - If the indicated PHY type is Egress, replace the cable in the module's egress port.
    - If the indicated PHY type is Ingress, replace the cable in the module's ingress port.
    - For other indicated PHY types or if replacing the cable does not fix the problem, replace the indicated module.
  - If the problem persists, check for other events that may indicate faulty hardware, such as an event indicating an over-temperature condition or power supply fault, and follow the recommended actions for those events.
  - If the problem persists, the fault may be in the enclosure midplane. Replace the chassis FRU.
- If any of the reasons listed under Additional Information is indicated and this event is logged shortly after a failover, user-initiated rescan, or restart, do the following:
  - If the event message identifies a disk slot, reseat the disk in that slot.
  - If the problem persists after reseating the disk, replace the disk.
  - If the event message identifies a module, do the following:
    - If the indicated PHY type is Egress, replace the cable in the module's egress port.
    - If the indicated PHY type is Ingress, replace the cable in the module's ingress port.
    - For other indicated PHY types or if replacing the cable does not fix the problem, replace the indicated module.
  - If the problem persists, check for other events that may indicate faulty hardware, such as an event indicating an over-temperature condition or power supply fault, and follow the recommended actions for those events.
  - If the problem persists, the fault may be in the enclosure midplane. Replace the chassis FRU.

274.6

Warning

```
A PHY was disabled. (enclosure: <enclosure number>, module: <text>, baseplane: <Baseplane
Number>, PHY: <numeric value>, PHY type: <text>, reason: <text>)
```

The indicated PHY has been disabled, either automatically or by a user. Drive PHYs are automatically disabled for empty disk slots or if a problem is detected. The following reasons indicate a likely hardware fault:

- "Disabled because of error count interrupts"
- "Disabled because of excessive PHY change counts"
- "PHY is ready but did not pass COMINIT"

Recommended action:

- If none of the reasons listed under Additional Information is indicated, no action is required.
- If any of the reasons listed under Additional Information is indicated and the event occurs shortly after the storage system is powered up, do the following:
  - Shut down the Storage Controllers. Then turn off the power for the indicated enclosure, wait a few seconds, and turn it back on.
  - If the problem recurs and the event message identifies a disk slot, replace the disk in that slot.
  - If the problem recurs and the event message identifies a module, do the following:
    - If the indicated PHY type is Egress, replace the cable in the module's egress port.
    - If the indicated PHY type is Ingress, replace the cable in the module's ingress port.
    - For other indicated PHY types or if replacing the cable does not fix the problem, replace the indicated module.
  - If the problem persists, check for other events that may indicate faulty hardware, such as an event indicating an over-temperature condition or power supply fault, and follow the recommended actions for those events.
  - If the problem persists, the fault may be in the enclosure midplane. Replace the chassis FRU.
- If any of the reasons listed under Additional Information is indicated and this event is logged shortly after a failover, user-initiated rescan, or restart, do the following:
  - If the event message identifies a disk slot, reseat the disk in that slot.
  - If the problem persists after reseating the disk, replace the disk.
  - If the event message identifies a module, do the following:
    - If the indicated PHY type is Egress, replace the cable in the module's egress port.
    - If the indicated PHY type is Ingress, replace the cable in the module's ingress port.
    - For other indicated PHY types or if replacing the cable does not fix the problem, replace the indicated module.
  - If the problem persists, check for other events that may indicate faulty hardware, such as an event indicating an over-temperature condition or power supply fault, and follow the recommended actions for those events.
  - If the problem persists, the fault may be in the enclosure midplane. Replace the chassis FRU.

275 - PHY enabled

275.1

Info

A PHY was enabled. (enclosure: <enclosure number>, module (enabled path to this disk): <text>, drawer: <drawer number>, disk slot: <numeric value>)

The indicated PHY has been enabled.

Recommended action:

- No action is required.

275.2

Info

A PHY was enabled. (enclosure: <enclosure number>, module: <text>, drawer: <drawer number>, PHY: <numeric value>, PHY type: <text>)

The indicated PHY has been enabled.

Recommended action:

- No action is required.

275.3

Info

A PHY was enabled. (enclosure: <enclosure number>, module (enabled path to this disk): <text>, disk slot: <numeric value>)

The indicated PHY has been enabled.

Recommended action:

- No action is required.

275.4

Info

A PHY was enabled. (enclosure: <enclosure number>, module: <text>, PHY: <numeric value>, PHY type: <text>)

The indicated PHY has been enabled.

Recommended action:

- No action is required.

275.5

Info

A PHY was enabled. (enclosure: <enclosure number>, module (enabled path to this disk): <text>, baseplane: <Baseplane Number>, disk slot: <numeric value>)

The indicated PHY has been enabled.

Recommended action:

- No action is required.

275.6

Info

A PHY was enabled. (enclosure: <enclosure number>, module: <text>, baseplane: <Baseplane Number>, PHY: <numeric value>, PHY type: <text>)

The indicated PHY has been enabled.

Recommended action:

- No action is required.

298 - Controller Date/Time invalid

298.1

Warning

The controller date and time are invalid.

This event will most commonly occur after a power loss if the real-time clock battery has failed. The time may have been set to a time that is up to 5 minutes before the power loss occurred, or it may have been reset to 1980-01-01 00:00:00.

Recommended action:

- Check the system date and time. If either is incorrect, set them to the correct date and time.
- Also look for event 246 and follow the recommended action for that event.

299 - Controller Date/Time recovered

299.1

Info

The controller date and time were successfully recovered.

This event will most commonly occur after an unexpected power loss.

Recommended action:

- No action is required, but if event 246 is also logged, follow the recommended action for that event.

300 - CPU frequency high

300.1

Info

The CPU frequency was adjusted to high.

Recommended action:

- No action is required.

301 - CPU frequency low

301.1

Info

The CPU frequency was adjusted to low.

None.

Recommended action:

- No action is required.

302 - DDR clock high

302.1

Info

The DDR memory clock was adjusted to high.

None.

Recommended action:

- No action is required.

303 - DDR clock low

303.1

Info

The DDR memory clock was adjusted to low.

None.

Recommended action:

- No action is required.

304 - I2C recoverable error

304.1

Info

A recoverable I2C error occurred. (device: <name>, error count: <count>)

The controller has detected I2C errors that may have been fully recovered.

Recommended action:

- No action is required.

305 - Serial number invalid

305.1

Info

`A serial number in SC flash was invalid. (type: controller module)`

A serial number in Storage Controller (SC) flash memory was found to be invalid when compared to the serial number in the controller-module or midplane FRU ID SEEPROM. The valid serial number has been recovered automatically.

Recommended action:

- No action is required.

305.2

Info

`A serial number in SC flash was invalid. (type: midplane)`

A serial number in Storage Controller (SC) flash memory was found to be invalid when compared to the serial number in the controller-module or midplane FRU ID SEEPROM. The valid serial number has been recovered automatically.

Recommended action:

- No action is required.

306 - Serial number updated

306.1

Info

`The serial number in SC flash was updated. (new SN: 0x<serial number>, old SN: 0x<serial number>)`

The controller-module serial number in Storage Controller (SC) flash memory was found to be invalid when compared to the serial number in the controller-module FRU ID SEEPROM. The valid serial number has been recovered automatically.

Recommended action:

- No action is required.

307 - Critical thermal shutdown

307.1

Critical

A Storage Controller shutdown occurred because the CPU temperature was out of the normal range. (temperature: <temperature> C)

Recommended action:

- Check that the storage system's fans are running.
- Check that the ambient temperature is not too warm. For the normal operating range, see your product's installation documentation.
- Check for any obstructions to the airflow.
- If the enclosure has drawers, check that they are closed.
- Check that there is a module or blank plate in every module slot in the enclosure.
- If none of the above explanations apply, replace the controller module that logged the error.

307.2

Critical

A Storage Controller shutdown occurred because the FPGA temperature was out of the normal range. (temperature: <temperature> C)

Recommended action:

- Check that the storage system's fans are running.
- Check that the ambient temperature is not too warm. For the normal operating range, see your product's installation documentation.
- Check for any obstructions to the airflow.
- If the enclosure has drawers, check that they are closed.
- Check that there is a module or blank plate in every module slot in the enclosure.
- If none of the above explanations apply, replace the controller module that logged the error.

307.3

Critical

A Storage Controller shutdown occurred because an on-board SAS2008 temperature was out of the normal range. (temperature: <temperature> C)

Recommended action:

- Check that the storage system's fans are running.
- Check that the ambient temperature is not too warm. For the normal operating range, see your product's installation documentation.
- Check for any obstructions to the airflow.
- If the enclosure has drawers, check that they are closed.
- Check that there is a module or blank plate in every module slot in the enclosure.
- If none of the above explanations apply, replace the controller module that logged the error.

307.4

Critical

A Storage Controller shutdown occurred because a SAS backend initiator temperature was out of the normal range. (temperature: <temperature> C)

Recommended action:

- Check that the storage system's fans are running.
- Check that the ambient temperature is not too warm. For the normal operating range, see your product's installation documentation.
- Check for any obstructions to the airflow.
- If the enclosure has drawers, check that they are closed.
- Check that there is a module or blank plate in every module slot in the enclosure.
- If none of the above explanations apply, replace the controller module that logged the error.

307.5

Critical

A Storage Controller shutdown occurred because a PCH (platform control hub) temperature was out of the normal range. (temperature: <temperature> C)

Recommended action:

- Check that the storage system's fans are running.
- Check that the ambient temperature is not too warm. For the normal operating range, see your product's installation documentation.
- Check for any obstructions to the airflow.
- If the enclosure has drawers, check that they are closed.
- Check that there is a module or blank plate in every module slot in the enclosure.
- If none of the above explanations apply, replace the controller module that logged the error.

307.6

Critical

A Storage Controller shutdown occurred because a left host I/O controller (IOC) temperature was out of the normal range. (temperature: <temperature> C)

Recommended action:

- Check that the storage system's fans are running.
- Check that the ambient temperature is not too warm. For the normal operating range, see your product's installation documentation.
- Check for any obstructions to the airflow.
- If the enclosure has drawers, check that they are closed.
- Check that there is a module or blank plate in every module slot in the enclosure.
- If none of the above explanations apply, replace the controller module that logged the error.

307.7

Critical

A Storage Controller shutdown occurred because a right host I/O controller (IOC) temperature was out of the normal range. (temperature: <temperature> C)

Recommended action:

- Check that the storage system's fans are running.
- Check that the ambient temperature is not too warm. For the normal operating range, see your product's installation documentation.
- Check for any obstructions to the airflow.
- If the enclosure has drawers, check that they are closed.
- Check that there is a module or blank plate in every module slot in the enclosure.
- If none of the above explanations apply, replace the controller module that logged the error.

307.8

Critical

A Storage Controller shutdown occurred because multiple disk temperatures were out of the normal range. (temperature: <temperature> C)

Recommended action:

- Check that the storage system's fans are running.
- Check that the ambient temperature is not too warm. For the normal operating range, see your product's installation documentation.
- Check for any obstructions to the airflow.
- If the enclosure has drawers, check that they are closed.
- Check that there is a module or blank plate in every module slot in the enclosure.
- If none of the above explanations apply, replace the controller module that logged the error.

307.9

Critical

An unknown sensor warning occurred. (p1: <numeric value>, p2: <numeric value>)

Recommended action:

- Check that the storage system's fans are running.
- Check that the ambient temperature is not too warm. For the normal operating range, see your product's installation documentation.
- Check for any obstructions to the airflow.
- If the enclosure has drawers, check that they are closed.
- Check that there is a module or blank plate in every module slot in the enclosure.
- If none of the above explanations apply, replace the controller module that logged the error.

309 - IP Address backup configuration used

309.1

Info

The startup IP address information was obtained from flash rather than the FRU-ID SEEPROM.

Normally when the Management Controller (MC) is started, the IP data is obtained from the midplane FRU ID SEEPROM where it is persisted. If the system is unable to write it to the SEEPROM the last time it changed, a flag is set in flash memory. This flag is checked during startup, and if set, this event is logged and the IP data that is in flash memory is used. The only time that this would not be the correct IP data would be if the controller module was swapped and then whatever data is in the controller's flash memory is used.

Recommended action:

- No action is required.

310 - Enclosure initialization completed

310.1

Info

Discovery and initialization of enclosure data was completed following a rescan.

After a rescan, back-end discovery and initialization of data for at least one EMP (Enclosure Management Processor) has completed. This event is not logged again when processing completes for other EMPs in the system.

Recommended action:

- No action is required.

313 - Controller failure

313.1

Error

RAID controller <device identifier> failed, reason <detailed error information>. Product ID <identifier>, S/N <serial number>)

The indicated controller module has failed. This event can be ignored for a single-controller configuration.

Recommended action:

- If this is a dual-controller system, replace the failed controller module. The module's Fault/Service Required LED will be illuminated (not blinking).

314 - FRU problem

314.1
Error

```
There is a problem with a FRU. (FRU type: Controller module A, <Baseplane Enclosure>, product
ID: <identifier>, SN: <serial number>, version: <identifier>, related event serial number:
<serial number>...<numeric value>, related event code: <numeric value>)
```

The indicated FRU has failed or is not operating correctly. This event follows some other FRU-specific event indicating a problem.

Recommended action:

- To determine whether the FRU needs to be replaced, see the topic about verifying component failure in your product's documentation.

314.2
Error

```
There is a problem with a FRU. (FRU type: Controller module B, <Baseplane Enclosure>, product
ID: <identifier>, SN: <serial number>, version: <identifier>, related event serial number:
<serial number>...<numeric value>, related event code: <numeric value>)
```

The indicated FRU has failed or is not operating correctly. This event follows some other FRU-specific event indicating a problem.

Recommended action:

- To determine whether the FRU needs to be replaced, see the topic about verifying component failure in your product's documentation.

314.5
Error

```
There is a problem with a FRU. (FRU type: PSU, Left, <Baseplane Enclosure>, product ID:
<identifier>, SN: <serial number>, version: <identifier>, related event serial number: <serial
number>...<numeric value>, related event code: <numeric value>)
```

The indicated FRU has failed or is not operating correctly. This event follows some other FRU-specific event indicating a problem.

Recommended action:

- To determine whether the FRU needs to be replaced, see the topic about verifying component failure in your product's documentation.

314.6

Error

```
There is a problem with a FRU. (FRU type: PSU, Right, <Baseplane Enclosure>, product ID:
<identifier>, SN: <serial number>, version: <identifier>, related event serial number: <serial
number>...<numeric value>, related event code: <numeric value>)
```

The indicated FRU has failed or is not operating correctly. This event follows some other FRU-specific event indicating a problem.

Recommended action:

- To determine whether the FRU needs to be replaced, see the topic about verifying component failure in your product's documentation.

314.7

Error

```
There is a problem with a FRU. (FRU type: PSU, Left, <Baseplane Enclosure>, product ID:
<identifier>, SN: <serial number>, version: <identifier>, related event serial number: <serial
number>...<numeric value>, related event code: <numeric value>)
```

The indicated FRU has failed or is not operating correctly. This event follows some other FRU-specific event indicating a problem.

Recommended action:

- To determine whether the FRU needs to be replaced, see the topic about verifying component failure in your product's documentation.

314.8

Error

```
There is a problem with a FRU. (FRU type: PSU, Right, <Baseplane Enclosure>, product ID:
<identifier>, SN: <serial number>, version: <identifier>, related event serial number: <serial
number>...<numeric value>, related event code: <numeric value>)
```

The indicated FRU has failed or is not operating correctly. This event follows some other FRU-specific event indicating a problem.

Recommended action:

- To determine whether the FRU needs to be replaced, see the topic about verifying component failure in your product's documentation.

314.9

Error

`There is a problem with a FRU. (FRU type: Midplane, <Baseplane Enclosure>, product ID: <identifier>, SN: <serial number>, version: <identifier>, related event serial number: <serial number>...<numeric value>, related event code: <numeric value>)`

The indicated FRU has failed or is not operating correctly. This event follows some other FRU-specific event indicating a problem.

Recommended action:

- To determine whether the FRU needs to be replaced, see the topic about verifying component failure in your product's documentation.

314.10

Error

`There is a problem with a FRU. (FRU type: Disk, enclosure: <enclosure number>, slot: <slot number>, device ID: <numeric value>, vendor: <numeric value>, product ID: <identifier>, SN: <serial number>, version: <identifier>, related event serial number: <serial number>...<numeric value>, related event code: <numeric value>)`

The indicated FRU has failed or is not operating correctly. This event follows some other FRU-specific event indicating a problem.

Recommended action:

- To determine whether the FRU needs to be replaced, see the topic about verifying component failure in your product's documentation.

314.11

Error

`There is a problem with a FRU. (FRU type: Fan module, Left, <Baseplane Enclosure>, product ID: <identifier>, SN: <serial number>, version: <identifier>, related event serial number: <serial number>...<numeric value>, related event code: <numeric value>)`

The indicated FRU has failed or is not operating correctly. This event follows some other FRU-specific event indicating a problem.

Recommended action:

- To determine whether the FRU needs to be replaced, see the topic about verifying component failure in your product's documentation.

314.12

Error

`There is a problem with a FRU. (FRU type: Fan module, Right, <Baseplane Enclosure>, product ID: <identifier>, SN: <serial number>, version: <identifier>, related event serial number: <serial number>...<numeric value>, related event code: <numeric value>)`

The indicated FRU has failed or is not operating correctly. This event follows some other FRU-specific event indicating a problem.

Recommended action:

*   To determine whether the FRU needs to be replaced, see the topic about verifying component failure in your product's documentation.

314.13

Error

`There is a problem with a FRU. (FRU type: Controller A memory card, <Baseplane Enclosure>, product ID: <identifier>, SN: <serial number>, version: <identifier>, related event serial number: <serial number>...<numeric value>, related event code: <numeric value>)`

The indicated FRU has failed or is not operating correctly. This event follows some other FRU-specific event indicating a problem.

Recommended action:

*   To determine whether the FRU needs to be replaced, see the topic about verifying component failure in your product's documentation.

314.14

Error

`There is a problem with a FRU. (FRU type: Controller B memory card, <Baseplane Enclosure>, product ID: <identifier>, SN: <serial number>, version: <identifier>, related event serial number: <serial number>...<numeric value>, related event code: <numeric value>)`

The indicated FRU has failed or is not operating correctly. This event follows some other FRU-specific event indicating a problem.

Recommended action:

*   To determine whether the FRU needs to be replaced, see the topic about verifying component failure in your product's documentation.

314.15

Error

```
There is a problem with a FRU. (FRU type: Undefined, <Baseplane Enclosure>, product ID:
<identifier>, SN: <serial number>, version: <identifier>, related event serial number: <serial
number>...<numeric value>, related event code: <numeric value>)
```

The indicated FRU has failed or is not operating correctly. This event follows some other FRU-specific event indicating a problem.

Recommended action:

- To determine whether the FRU needs to be replaced, see the topic about verifying component failure in your product's documentation.

314.16

Error

```
There is a problem with a FRU. (FRU type: Unknown, <Baseplane Enclosure>, product ID:
<identifier>, SN: <serial number>, version: <identifier>, related event serial number: <serial
number>...<numeric value>, related event code: <numeric value>)
```

The indicated FRU has failed or is not operating correctly. This event follows some other FRU-specific event indicating a problem.

Recommended action:

- To determine whether the FRU needs to be replaced, see the topic about verifying component failure in your product's documentation.

314.17

Error

```
There is a problem with a FRU. (FRU type: Drawer, Left, <Baseplane Enclosure>, product ID:
<identifier>, SN: <serial number>, version: <identifier>, related event serial number: <serial
number>...<numeric value>, related event code: <numeric value>)
```

The indicated FRU has failed or is not operating correctly. This event follows some other FRU-specific event indicating a problem.

Recommended action:

- To determine whether the FRU needs to be replaced, see the topic about verifying component failure in your product's documentation.

314.18

Error

There is a problem with a FRU. (FRU type: Drawer, Middle, <Baseplane Enclosure>, product ID: <identifier>, SN: <serial number>, version: <identifier>, related event serial number: <serial number>...<numeric value>, related event code: <numeric value>)

The indicated FRU has failed or is not operating correctly. This event follows some other FRU-specific event indicating a problem.

Recommended action:

- To determine whether the FRU needs to be replaced, see the topic about verifying component failure in your product's documentation.

314.19

Error

There is a problem with a FRU. (FRU type: Drawer, Right, <Baseplane Enclosure>, product ID: <identifier>, SN: <serial number>, version: <identifier>, related event serial number: <serial number>...<numeric value>, related event code: <numeric value>)

The indicated FRU has failed or is not operating correctly. This event follows some other FRU-specific event indicating a problem.

Recommended action:

- To determine whether the FRU needs to be replaced, see the topic about verifying component failure in your product's documentation.

314.20

Error

There is a problem with a FRU. (FRU type: Top drawer sideplane, Left, <Baseplane Enclosure>, product ID: <identifier>, SN: <serial number>, version: <identifier>, related event serial number: <serial number>...<numeric value>, related event code: <numeric value>)

The indicated FRU has failed or is not operating correctly. This event follows some other FRU-specific event indicating a problem.

Recommended action:

- To determine whether the FRU needs to be replaced, see the topic about verifying component failure in your product's documentation.

314.21

Error

```
There is a problem with a FRU. (FRU type: Top drawer sideplane, Right, <Baseplane Enclosure>,
product ID: <identifier>, SN: <serial number>, version: <identifier>, related event serial
number: <serial number>...<numeric value>, related event code: <numeric value>)
```

The indicated FRU has failed or is not operating correctly. This event follows some other FRU-specific event indicating a problem.

Recommended action:

- To determine whether the FRU needs to be replaced, see the topic about verifying component failure in your product's documentation.

314.22

Error

```
There is a problem with a FRU. (FRU type: Bottom drawer sideplane, Left, <Baseplane Enclosure>,
product ID: <identifier>, SN: <serial number>, version: <identifier>, related event serial
number: <serial number>...<numeric value>, related event code: <numeric value>)
```

The indicated FRU has failed or is not operating correctly. This event follows some other FRU-specific event indicating a problem.

Recommended action:

- To determine whether the FRU needs to be replaced, see the topic about verifying component failure in your product's documentation.

314.23

Error

```
There is a problem with a FRU. (FRU type: Bottom drawer sideplane, Right, <Baseplane
Enclosure>, product ID: <identifier>, SN: <serial number>, version: <identifier>, related
event serial number: <serial number>...<numeric value>, related event code: <numeric value>)
```

The indicated FRU has failed or is not operating correctly. This event follows some other FRU-specific event indicating a problem.

Recommended action:

- To determine whether the FRU needs to be replaced, see the topic about verifying component failure in your product's documentation.

314.24

Error

```
There is a problem with a FRU. (FRU type: Fan Module 0, <Baseplane Enclosure>, product ID:
<identifier>, SN: <serial number>, version: <identifier>, related event serial number: <serial
number>...<numeric value>, related event code: <numeric value>)
```

The indicated FRU has failed or is not operating correctly. This event follows some other FRU-specific event indicating a problem.

Recommended action:

- To determine whether the FRU needs to be replaced, see the topic about verifying component failure in your product's documentation.

314.25

Error

```
There is a problem with a FRU. (FRU type: Fan Module 1, <Baseplane Enclosure>, product ID:
<identifier>, SN: <serial number>, version: <identifier>, related event serial number: <serial
number>...<numeric value>, related event code: <numeric value>)
```

The indicated FRU has failed or is not operating correctly. This event follows some other FRU-specific event indicating a problem.

Recommended action:

- To determine whether the FRU needs to be replaced, see the topic about verifying component failure in your product's documentation.

314.26

Error

```
There is a problem with a FRU. (FRU type: Fan Module 2, <Baseplane Enclosure>, product ID:
<identifier>, SN: <serial number>, version: <identifier>, related event serial number: <serial
number>...<numeric value>, related event code: <numeric value>)
```

The indicated FRU has failed or is not operating correctly. This event follows some other FRU-specific event indicating a problem.

Recommended action:

- To determine whether the FRU needs to be replaced, see the topic about verifying component failure in your product's documentation.

314.27

Error

```
There is a problem with a FRU. (FRU type: Fan Module 3, <Baseplane Enclosure>, product ID:
<identifier>, SN: <serial number>, version: <identifier>, related event serial number: <serial
number>...<numeric value>, related event code: <numeric value>)
```

The indicated FRU has failed or is not operating correctly. This event follows some other FRU-specific event indicating a problem.

Recommended action:

- To determine whether the FRU needs to be replaced, see the topic about verifying component failure in your product's documentation.

314.28

Error

```
There is a problem with a FRU. (FRU type: Fan Module 4, <Baseplane Enclosure>, product ID:
<identifier>, SN: <serial number>, version: <identifier>, related event serial number: <serial
number>...<numeric value>, related event code: <numeric value>)
```

The indicated FRU has failed or is not operating correctly. This event follows some other FRU-specific event indicating a problem.

Recommended action:

- To determine whether the FRU needs to be replaced, see the topic about verifying component failure in your product's documentation.

315 - Enclosure incompatible

315.1

Critical

```
This IOM is incompatible with the enclosure in which it is inserted (enclosure: <enclosure
number>, WWN: <World Wide Name>).
```

None.

Recommended action:

- Replace this IOM with an IOM that is compatible with this enclosure.

317 - Disk channel hardware failure

317.1

Error

Disk channel hardware failure.

A serious error has been detected on the Storage Controller's disk interface. The controller that logged this event will be killed by its partner.

Recommended action:

- Visually trace the cabling between the controller modules and expansion modules.
- If the cabling is OK, replace the controller module that logged this event.
- If the problem recurs, replace the expansion module that is connected to the controller module.

319 - Disk failed

319.1

Warning

An available disk drive failed. (disk: channel: <channel index>, ID: <device identifier>, SN: <serial number>, enclosure: <enclosure number>, slot: <slot number>)

None.

Recommended action:

- Replace the disk with one of the same type (SSD, enterprise SAS, or midline SAS) and the same or greater capacity. For continued optimum I/O performance, the replacement disk should have performance that is the same as or better than the one it is replacing.

352 - Expander controller exception

352.1

Info

Expander Controller exception data is available.

Expander Controller (EC) assert data or stack-dump data is available.

Recommended action:

- No action is required.

353 - Expander controller exception cleared

353.1

Info

Expander Controller exception data was cleared.

Expander Controller (EC) assert data and stack-dump data have been cleared.

Recommended action:

- No action is required.

354 - Host SAS topology changed

354.1

Warning

`Host SAS topology was changed. (host port: <channel index>, <count> out of <count> PHYs are up, link speed: <numeric value>)`

SAS topology has changed on a host port. At least one PHY has gone down. For example, the SAS cable connecting a controller host port to a host has been disconnected.

Recommended action:

- Check the cable connection between the indicated port and the host.
- Monitor the log to see if the problem persists.

354.2

Info

`Host SAS topology was changed. (host port: <channel index>, <count> out of <count> PHYs are up, link speed: <numeric value>)`

SAS topology has changed on a host port. At least one PHY has become active. For example, the SAS cable connecting a controller host port to a host has been connected.

Recommended action:

- No action is required.

355 - Debug button stuck on

355.1

Warning

`The faceplate's debug button was found to be stuck on during boot up.`

None.

Recommended action:

- If the button remains stuck, replace the controller module.

356 - Mfg board level test failed

356.1

Warning

`Manufacturing Board Level Test(s) failed. (<count> failures starting with test <name>, codes: <detailed error information>)`

This event can only result from tests that are run in the manufacturing environment.

Recommended action:

- Follow the manufacturing process.

357 - Mfg board level test not run

357.1

Warning

`Manufacturing Board Level Tests were not run; controller is suspended.`

This event can only result from tests that are run in the manufacturing environment.

Recommended action:

- Follow the manufacturing process.

358 - Disk channel PHY down

358.1

Critical

`<count> out of <count> PHYs are down for a disk channel. (channel: <channel index>)`

All PHYs are down for the indicated disk channel. The system is degraded and is not fault tolerant because all disks are in a single-ported state.

Recommended action:

- Turn off the power for the controller enclosure, wait a few seconds, and turn it back on.
- If event 359 has been logged for the indicated channel, indicating the condition no longer exists, no further action is required.
- If the condition persists, this indicates a hardware problem in one of the controller modules or in the controller enclosure midplane. For help identifying which FRU to replace, see "Resources for diagnosing and resolving problems" in the Event Descriptions Reference Guide.

358.2

Warning

`<count> out of <count> PHYs are down for a disk channel. (channel: <channel index>)`

Some, but not all, PHYs are down for the indicated disk channel.

Recommended action:

- Monitor the log to see whether the condition persists.
- If event 359 has been logged for the indicated channel, indicating the condition no longer exists, no further action is required.
- If the condition persists, this indicates a hardware problem in one of the controller modules or in the controller enclosure midplane. For help identifying which FRU to replace, see "Resources for diagnosing and resolving problems" in the Event Descriptions Reference Guide.

359 - Disk channel PHY up

359.1

Info

```
All PHYs that were down for a disk channel are now up (have recovered). (channel: <channel index>)
```

None.

Recommended action:

- No action is required.

360 - Disk channel PHY speed changed

360.1

Info

```
The speed of a disk PHY was renegotiated. This is normal behavior. (enclosure: <enclosure number>, module: <numeric value>, drawer: <drawer number>, disk slot: <slot number>)
```

Recommended action:

- No action is required.

360.2

Info

```
The speed of a disk PHY was renegotiated. This is normal behavior. (enclosure: <enclosure number>, module: <numeric value>, disk slot: <slot number>)
```

Recommended action:

- No action is required.

363 - Firmware version check

363.1

Info

```
Firmware versions match those in the firmware bundle. (controller: <text>)
```

When the Management Controller (MC) is restarted, firmware versions that are currently installed are compared against those in the bundle that was most recently installed. If the versions match, this event is logged as Informational severity. Components checked include the CPLD, Expander Controller (EC), Storage Controller (SC), and MC.

Recommended action:

- No action is required.

363.2

Error

```
Firmware versions match those in the firmware bundle. (controller: <text>)
```

When the Management Controller (MC) is restarted, firmware versions that are currently installed are compared against those in the bundle that was most recently installed. When firmware is updated, it is important that all components are successfully updated or the system may not work correctly. Components checked include the CPLD, Expander Controller (EC), Storage Controller (SC), and MC.

Recommended action:

- Reinstall the firmware bundle.

363.3

Info

```
Firmware versions do not match those in the firmware bundle. (controller: <text>, mismatched
components: SC)
```

When the Management Controller (MC) is restarted, firmware versions that are currently installed are compared against those in the bundle that was most recently installed. If the versions match, this event is logged as Informational severity. Components checked include the CPLD, Expander Controller (EC), Storage Controller (SC), and MC.

Recommended action:

- No action is required.

363.4

Error

```
Firmware versions do not match those in the firmware bundle. (controller: <text>, mismatched
components: SC)
```

When the Management Controller (MC) is restarted, firmware versions that are currently installed are compared against those in the bundle that was most recently installed. When firmware is updated, it is important that all components are successfully updated or the system may not work correctly. Components checked include the CPLD, Expander Controller (EC), Storage Controller (SC), and MC.

Recommended action:

- Reinstall the firmware bundle.

363.5

Info

```
Firmware versions do not match those in the firmware bundle. (controller: <text>, mismatched
components: SC, MC)
```

When the Management Controller (MC) is restarted, firmware versions that are currently installed are compared against those in the bundle that was most recently installed. If the versions match, this event is logged as Informational severity. Components checked include the CPLD, Expander Controller (EC), Storage Controller (SC), and MC.

Recommended action:

- No action is required.

363.6

Error

```
Firmware versions do not match those in the firmware bundle. (controller: <text>, mismatched
components: SC, MC)
```

When the Management Controller (MC) is restarted, firmware versions that are currently installed are compared against those in the bundle that was most recently installed. When firmware is updated, it is important that all components are successfully updated or the system may not work correctly. Components checked include the CPLD, Expander Controller (EC), Storage Controller (SC), and MC.

Recommended action:

- Reinstall the firmware bundle.

363.7

Info

```
Firmware versions do not match those in the firmware bundle. (controller: <text>, mismatched
components: SC, MC, EC)
```

When the Management Controller (MC) is restarted, firmware versions that are currently installed are compared against those in the bundle that was most recently installed. If the versions match, this event is logged as Informational severity. Components checked include the CPLD, Expander Controller (EC), Storage Controller (SC), and MC.

Recommended action:

- No action is required.

363.8

Error

```
Firmware versions do not match those in the firmware bundle. (controller: <text>, mismatched
components: SC, MC, EC)
```

When the Management Controller (MC) is restarted, firmware versions that are currently installed are compared against those in the bundle that was most recently installed. When firmware is updated, it is important that all components are successfully updated or the system may not work correctly. Components checked include the CPLD, Expander Controller (EC), Storage Controller (SC), and MC.

Recommended action:

- Reinstall the firmware bundle.

363.9

Info

```
Firmware versions do not match those in the firmware bundle. (controller: <text>, mismatched
components: SC, MC, EC, CPLD)
```

When the Management Controller (MC) is restarted, firmware versions that are currently installed are compared against those in the bundle that was most recently installed. If the versions match, this event is logged as Informational severity. Components checked include the CPLD, Expander Controller (EC), Storage Controller (SC), and MC.

Recommended action:

- No action is required.

363.10

Error

```
Firmware versions do not match those in the firmware bundle. (controller: <text>, mismatched
components: SC, MC, EC, CPLD)
```

When the Management Controller (MC) is restarted, firmware versions that are currently installed are compared against those in the bundle that was most recently installed. When firmware is updated, it is important that all components are successfully updated or the system may not work correctly. Components checked include the CPLD, Expander Controller (EC), Storage Controller (SC), and MC.

Recommended action:

- Reinstall the firmware bundle.

363.11

Info

```
Firmware versions do not match those in the firmware bundle. (controller: <text>, mismatched
components: SC, MC, CPLD)
```

When the Management Controller (MC) is restarted, firmware versions that are currently installed are compared against those in the bundle that was most recently installed. If the versions match, this event is logged as Informational severity. Components checked include the CPLD, Expander Controller (EC), Storage Controller (SC), and MC.

Recommended action:

- No action is required.

363.12

Error

```
Firmware versions do not match those in the firmware bundle. (controller: <text>, mismatched
components: SC, MC, CPLD)
```

When the Management Controller (MC) is restarted, firmware versions that are currently installed are compared against those in the bundle that was most recently installed. When firmware is updated, it is important that all components are successfully updated or the system may not work correctly. Components checked include the CPLD, Expander Controller (EC), Storage Controller (SC), and MC.

Recommended action:

- Reinstall the firmware bundle.

363.13

Info

```
Firmware versions do not match those in the firmware bundle. (controller: <text>, mismatched
components: SC, EC)
```

When the Management Controller (MC) is restarted, firmware versions that are currently installed are compared against those in the bundle that was most recently installed. If the versions match, this event is logged as Informational severity. Components checked include the CPLD, Expander Controller (EC), Storage Controller (SC), and MC.

Recommended action:

- No action is required.

363.14

Error

```
Firmware versions do not match those in the firmware bundle. (controller: <text>, mismatched
components: SC, EC)
```

When the Management Controller (MC) is restarted, firmware versions that are currently installed are compared against those in the bundle that was most recently installed. When firmware is updated, it is important that all components are successfully updated or the system may not work correctly. Components checked include the CPLD, Expander Controller (EC), Storage Controller (SC), and MC.

Recommended action:

- Reinstall the firmware bundle.

363.15

Info

```
Firmware versions do not match those in the firmware bundle. (controller: <text>, mismatched
components: SC, EC, CPLD)
```

When the Management Controller (MC) is restarted, firmware versions that are currently installed are compared against those in the bundle that was most recently installed. If the versions match, this event is logged as Informational severity. Components checked include the CPLD, Expander Controller (EC), Storage Controller (SC), and MC.

Recommended action:

- No action is required.

363.16

Error

```
Firmware versions do not match those in the firmware bundle. (controller: <text>, mismatched
components: SC, EC, CPLD)
```

When the Management Controller (MC) is restarted, firmware versions that are currently installed are compared against those in the bundle that was most recently installed. When firmware is updated, it is important that all components are successfully updated or the system may not work correctly. Components checked include the CPLD, Expander Controller (EC), Storage Controller (SC), and MC.

Recommended action:

- Reinstall the firmware bundle.

363.17

Info

```
Firmware versions do not match those in the firmware bundle. (controller: <text>, mismatched
components: SC, CPLD)
```

When the Management Controller (MC) is restarted, firmware versions that are currently installed are compared against those in the bundle that was most recently installed. If the versions match, this event is logged as Informational severity. Components checked include the CPLD, Expander Controller (EC), Storage Controller (SC), and MC.

Recommended action:

- No action is required.

363.18

Error

```
Firmware versions do not match those in the firmware bundle. (controller: <text>, mismatched
components: SC, CPLD)
```

When the Management Controller (MC) is restarted, firmware versions that are currently installed are compared against those in the bundle that was most recently installed. When firmware is updated, it is important that all components are successfully updated or the system may not work correctly. Components checked include the CPLD, Expander Controller (EC), Storage Controller (SC), and MC.

Recommended action:

- Reinstall the firmware bundle.

363.25

Info

```
Firmware versions do not match those in the firmware bundle. (controller: <text>, mismatched
components: MC, CPLD)
```

When the Management Controller (MC) is restarted, firmware versions that are currently installed are compared against those in the bundle that was most recently installed. If the versions match, this event is logged as Informational severity. Components checked include the CPLD, Expander Controller (EC), Storage Controller (SC), and MC.

Recommended action:

- No action is required.

363.26

Error

```
Firmware versions do not match those in the firmware bundle. (controller: <text>, mismatched
components: MC, CPLD)
```

When the Management Controller (MC) is restarted, firmware versions that are currently installed are compared against those in the bundle that was most recently installed. When firmware is updated, it is important that all components are successfully updated or the system may not work correctly. Components checked include the CPLD, Expander Controller (EC), Storage Controller (SC), and MC.

Recommended action:

- Reinstall the firmware bundle.

363.27

Info

```
Firmware versions do not match those in the firmware bundle. (controller: <text>, mismatched
components: EC)
```

When the Management Controller (MC) is restarted, firmware versions that are currently installed are compared against those in the bundle that was most recently installed. If the versions match, this event is logged as Informational severity. Components checked include the CPLD, Expander Controller (EC), Storage Controller (SC), and MC.

Recommended action:

- No action is required.

363.28

Error

```
Firmware versions do not match those in the firmware bundle. (controller: <text>, mismatched
components: EC)
```

When the Management Controller (MC) is restarted, firmware versions that are currently installed are compared against those in the bundle that was most recently installed. When firmware is updated, it is important that all components are successfully updated or the system may not work correctly. Components checked include the CPLD, Expander Controller (EC), Storage Controller (SC), and MC.

Recommended action:

• Reinstall the firmware bundle.

363.29

Info

```
Firmware versions do not match those in the firmware bundle. (controller: <text>, mismatched
components: EC, CPLD)
```

When the Management Controller (MC) is restarted, firmware versions that are currently installed are compared against those in the bundle that was most recently installed. If the versions match, this event is logged as Informational severity. Components checked include the CPLD, Expander Controller (EC), Storage Controller (SC), and MC.

Recommended action:

• No action is required.

363.30

Error

```
Firmware versions do not match those in the firmware bundle. (controller: <text>, mismatched
components: EC, CPLD)
```

When the Management Controller (MC) is restarted, firmware versions that are currently installed are compared against those in the bundle that was most recently installed. When firmware is updated, it is important that all components are successfully updated or the system may not work correctly. Components checked include the CPLD, Expander Controller (EC), Storage Controller (SC), and MC.

Recommended action:

• Reinstall the firmware bundle.

363.31

Info

```
Firmware versions do not match those in the firmware bundle. (controller: <text>, mismatched
components: CPLD)
```

When the Management Controller (MC) is restarted, firmware versions that are currently installed are compared against those in the bundle that was most recently installed. If the versions match, this event is logged as Informational severity. Components checked include the CPLD, Expander Controller (EC), Storage Controller (SC), and MC.

Recommended action:

• No action is required.

363.32

Error

```
Firmware versions do not match those in the firmware bundle. (controller: <text>, mismatched
components: CPLD)
```

When the Management Controller (MC) is restarted, firmware versions that are currently installed are compared against those in the bundle that was most recently installed. When firmware is updated, it is important that all components are successfully updated or the system may not work correctly. Components checked include the CPLD, Expander Controller (EC), Storage Controller (SC), and MC.

Recommended action:

- Reinstall the firmware bundle.

364 - Broadcast bus running gen 1

364.1

Info

```
The broadcast bus is running as generation 1.
```

Recommended action:

- No action is required.

365 - Uncorrectable ECC error

365.1

Error

```
An uncorrectable ECC error occurred in Storage Controller CPU memory. (<detailed error
information>)
```

- An uncorrectable ECC error occurred in CPU memory more than once, indicating a probable hardware fault.

Recommended action:

- Replace the controller module that logged this event.

365.2

Warning

```
An uncorrectable ECC error occurred in Storage Controller CPU memory. (<detailed error
information>)
```

- This event is logged with Warning severity to provide information that may be useful to technical support, but no action is required now. It will be logged with Error severity if it is necessary to replace the controller module.

Recommended action:

- No action is required.

400 - Managed log threshold reached

400.1

Info

Managed logs: A log region has reached the level at which it should be archived. (region: Crash 1, region code: <numeric value>)

Recommended action:

- No action is required.

400.2

Info

Managed logs: A log region has reached the level at which it should be archived. (region: Crash 2, region code: <numeric value>)

Recommended action:

- No action is required.

400.3

Info

Managed logs: A log region has reached the level at which it should be archived. (region: Crash 3, region code: <numeric value>)

Recommended action:

- No action is required.

400.4

Info

Managed logs: A log region has reached the level at which it should be archived. (region: Crash 4, region code: <numeric value>)

Recommended action:

- No action is required.

400.5

Info

Managed logs: A log region has reached the level at which it should be archived. (region: SC debug, region code: <numeric value>)

Recommended action:

- No action is required.

400.6

Info

```
Managed logs: A log region has reached the level at which it should be archived. (region: EC
debug, region code: <numeric value>)
```

Recommended action:

- No action is required.

400.7

Info

```
Managed logs: A log region has reached the level at which it should be archived. (region: SC
dynalog, region code: <numeric value>)
```

Recommended action:

- No action is required.

400.8

Info

```
Managed logs: A log region has reached the level at which it should be archived. (region: MC
debug, region code: <numeric value>)
```

Recommended action:

- No action is required.

400.9

Info

```
Managed logs: A log region has reached the level at which it should be archived. (region:
Unknown region=<numeric value>, region code: <numeric value>)
```

Recommended action:

- No action is required.

401 - Managed log threshold warning

401.1

Warning

```
Managed logs warning: A log region has reached its warning level and should be archived before
log data is lost. (region: Crash 1, region code: <text>)
```

Recommended action:

- Transfer the log file to the log-collection system.

401.2

Warning

```
Managed logs warning: A log region has reached its warning level and should be archived before
log data is lost. (region: Crash 2, region code: <text>)
```

Recommended action:

- Transfer the log file to the log-collection system.

401.3

Warning

```
Managed logs warning: A log region has reached its warning level and should be archived before
log data is lost. (region: Crash 3, region code: <text>)
```

Recommended action:

- Transfer the log file to the log-collection system.

401.4

Warning

```
Managed logs warning: A log region has reached its warning level and should be archived before
log data is lost. (region: Crash 4, region code: <text>)
```

Recommended action:

- Transfer the log file to the log-collection system.

401.5

Warning

```
Managed logs warning: A log region has reached its warning level and should be archived before
log data is lost. (region: SC debug, region code: <text>)
```

Recommended action:

- Transfer the log file to the log-collection system.

401.6

Warning

```
Managed logs warning: A log region has reached its warning level and should be archived before
log data is lost. (region: EC debug, region code: <text>)
```

Recommended action:

- Transfer the log file to the log-collection system.

401.7

Warning

```
Managed logs warning: A log region has reached its warning level and should be archived before
log data is lost. (region: SC dynalog, region code: <text>)
```

Recommended action:

- Transfer the log file to the log-collection system.

401.8

Warning

`Managed logs warning: A log region has reached its warning level and should be archived before log data is lost. (region: MC debug, region code: <text>)`

Recommended action:

- Transfer the log file to the log-collection system.

401.9

Warning

`Managed logs warning: A log region has reached its warning level and should be archived before log data is lost. (region: Unknown region=<text>, region code: <text>)`

Recommended action:

- Transfer the log file to the log-collection system.

402 - Managed log threshold wrapped

402.1

Error

`Managed logs wrapped: A log region has wrapped, and log data has been lost. (region: Crash 1, region code: <text>)`

Recommended action:

- Investigate why the log-collection system is not transferring the logs before they are overwritten. For example, you might have enabled managed logs without configuring a destination to send logs to.

402.2

Error

`Managed logs wrapped: A log region has wrapped, and log data has been lost. (region: Crash 2, region code: <text>)`

Recommended action:

- Investigate why the log-collection system is not transferring the logs before they are overwritten. For example, you might have enabled managed logs without configuring a destination to send logs to.

402.3

Error

`Managed logs wrapped: A log region has wrapped, and log data has been lost. (region: Crash 3, region code: <text>)`

Recommended action:

- Investigate why the log-collection system is not transferring the logs before they are overwritten. For example, you might have enabled managed logs without configuring a destination to send logs to.

402.4

Error

```
Managed logs wrapped: A log region has wrapped, and log data has been lost. (region: Crash 4,
region code: <text>)
```

Recommended action:

- Investigate why the log-collection system is not transferring the logs before they are overwritten. For example, you might have enabled managed logs without configuring a destination to send logs to.

402.5

Error

```
Managed logs wrapped: A log region has wrapped, and log data has been lost. (region: SC debug,
region code: <text>)
```

Recommended action:

- Investigate why the log-collection system is not transferring the logs before they are overwritten. For example, you might have enabled managed logs without configuring a destination to send logs to.

402.6

Error

```
Managed logs wrapped: A log region has wrapped, and log data has been lost. (region: EC debug,
region code: <text>)
```

Recommended action:

- Investigate why the log-collection system is not transferring the logs before they are overwritten. For example, you might have enabled managed logs without configuring a destination to send logs to.

402.7

Error

```
Managed logs wrapped: A log region has wrapped, and log data has been lost. (region: SC dynalog,
region code: <text>)
```

Recommended action:

- Investigate why the log-collection system is not transferring the logs before they are overwritten. For example, you might have enabled managed logs without configuring a destination to send logs to.

402.8

Error

```
Managed logs wrapped: A log region has wrapped, and log data has been lost. (region: MC debug,
region code: <text>)
```

Recommended action:

- Investigate why the log-collection system is not transferring the logs before they are overwritten. For example, you might have enabled managed logs without configuring a destination to send logs to.

402.9

Error

```
Managed logs wrapped: A log region has wrapped, and log data has been lost. (region: Unknown
region=<text>, region code: <text>)
```

Recommended action:

- Investigate why the log-collection system is not transferring the logs before they are overwritten. For example, you might have enabled managed logs without configuring a destination to send logs to.

412 - Disk group degraded

412.1

Warning

```
A disk group is degraded. (disk group: <name>, SN: <serial number>)
```

One disk in the indicated RAID-6 disk group failed. The disk group is online but has a status of FTDN (fault tolerant with a down disk).

If a dedicated spare or global spare of the proper type and size is present, that spare is used to automatically reconstruct the disk group. Events 9 and 37 are logged to indicate this. If no usable spare disk is present, but an available disk of the proper type and size is present and the dynamic spares feature is enabled, that disk is used to automatically reconstruct the disk group and event 37 is logged.

Recommended action:

- If event 37 was not logged, a spare of the proper type and size was not available for reconstruction. Replace the failed disk with one of the same type and the same or greater capacity and, if necessary, designate it as a spare. Confirm this by checking that events 9 and 37 are logged.
- Otherwise, reconstruction automatically started and event 37 was logged. Replace the failed disk and configure the replacement as a dedicated (linear only) or global spare for future use.
- For continued optimum I/O performance, the replacement disk should have the same or better performance.
- Confirm that all failed disks have been replaced and that there are sufficient spare disks configured for future use.

412.2

Warning

`A disk group is degraded. (disk group: <name>, SN: <serial number>)`

One disk in the indicated RAID-6 disk group failed. The disk group is online but has a status of FTDN (fault tolerant with a down disk).

If a global spare of the proper type and size is present, that spare is used to automatically reconstruct the disk group. Events 9 and 37 are logged to indicate this. If no usable spare disk is present, but an available disk of the proper type and size is present and the dynamic spares feature is enabled, that disk is used to automatically reconstruct the disk group and event 37 is logged.

Recommended action:

- If event 37 was not logged, a spare of the proper type and size was not available for reconstruction. Replace the failed disk with one of the same type and the same or greater capacity and, if necessary, designate it as a spare. Confirm this by checking that events 9 and 37 are logged.
- Otherwise, reconstruction automatically started and event 37 was logged. Replace the failed disk and configure the replacement as a global spare for future use.
- For continued optimum I/O performance, the replacement disk should have the same or better performance.
- Confirm that all failed disks have been replaced and that there are sufficient spare disks configured for future use.

412.3

Warning

`An ADAPT ...disk group is degraded. (disk group: <name>, SN: <serial number>)`

One disk in the indicated ADAPT ...disk group failed. The disk group is online but has a status of FTDN (fault tolerant with a down disk).

If the ADAPT ...disk group has spare space available, reconstruction will start automatically.

Recommended action:

- If event 37 was not logged, spare space was not available for reconstruction. Replace the failed disk with one of the same type and the same or greater size. Reconstruction should start and event 37 should be logged automatically./n- For continued optimum I/O performance, the replacement disk should have the same or better performance.
- Confirm that all failed disks have been replaced for future fault tolerance.

442 - UART diagnostic failure

442.1

Warning

`The power-on self test (POST) diagnostics detected a hardware error in a UART chip or chips. The SC UART failed. (expected data: <text>, actual data: <text>)`

Recommended action:

- Replace the controller module that logged this event.

442.2

Warning

The power-on self test (POST) diagnostics detected a hardware error in a UART chip or chips. The MC UART failed. (expected data: <text>, actual data: <text>)

Recommended action:

- Replace the controller module that logged this event.

442.3

Warning

The power-on self test (POST) diagnostics detected a hardware error in a UART chip or chips. Both UARTs failed. (expected data: <text>, actual data: <text>)

Recommended action:

- Replace the controller module that logged this event.

442.4

Warning

The power-on self test (POST) diagnostics detected a hardware error in a UART chip or chips. (expected data: <text>, actual data: <text>)

Recommended action:

- Replace the controller module that logged this event.

456 - Midplane OUI data not accessible

456.1

Warning

Midplane OUI information was not accessible; using default OUI for IQN generation. This may prevent hosts from accessing the system.

The system's IQN was generated from the default OUI because the controllers could not read the OUI from the midplane FRU ID data during startup. If the IQN is wrong for the system's branding, iSCSI hosts might be unable to access the system.

Recommended action:

- If event 270 with status code 0 is logged at approximately the same time, restart the Storage Controllers.

464 - Unsupported SFP detected

464.1

Warning

An unsupported SFP was detected. The SFP is not compatible with this system. You must use an SFP that is qualified for use in this system. (host port: <channel index>, cable technology code: <numeric value>, 10G compliance code: <numeric value>)

A user inserted an unsupported cable or SFP into the indicated controller host port.

Recommended action:

- Replace the cable or SFP with a supported type.

464.2

Warning

The installed SFP does not match the configured protocol of this port. (host port: <channel index>, cable technology code: <numeric value>, 10G compliance code: <numeric value>)

A user inserted an unsupported cable or SFP into the indicated controller host port.

Recommended action:

- Replace the cable or SFP with a supported type.

464.3

Warning

An unsupported or faulty SFP was detected. (host port: <channel index>, cable technology code: <numeric value>, 10G compliance code: <numeric value>)

A user inserted an unsupported cable or SFP into the indicated controller host port.

Recommended action:

- Replace the cable or SFP with a supported type.

464.5

Warning

An unsupported SFP was detected. The SFP is not compatible with this system. You must use an SFP that is qualified for use in this system. (host port: <channel index>)

A user inserted an unsupported cable or SFP into the indicated controller host port.

Recommended action:

- Replace the cable or SFP with a supported type.

464.6

Warning

The installed SFP does not match the configured protocol of this port. (host port: <channel index>)

A user inserted an unsupported cable or SFP into the indicated controller host port.

Recommended action:

- Replace the cable or SFP with a supported type.

464.7

Warning

An unsupported or faulty SFP was detected. (host port: <channel index>)

A user inserted an unsupported cable or SFP into the indicated controller host port.

Recommended action:

- Replace the cable or SFP with a supported type.

464.8
Warning

`An unsupported Fibre Channel cable or SFP was detected. (host port: <channel index>, speed: <link speed>)`

A user inserted an unsupported cable or SFP into the indicated controller host port.

Recommended action:

- Replace the cable or SFP with a supported type.

464.10
Warning

`An unsupported SAS cable was detected. (host port: <channel index>)`

A user inserted an unsupported cable or SFP into the indicated controller host port.

Recommended action:

- Replace the cable or SFP with a supported type.

465 - Unsupported SFP removed

465.2
Info

`An unsupported cable or SFP was removed from a Fibre Channel port. (host port: <channel index>)`

A user removed an unsupported cable or SFP from the indicated controller host port.

Recommended action:

- No action is required.

465.4
Info

`An unsupported cable was removed from a SAS port. (host port: <channel index>)`

A user removed an unsupported cable or SFP from the indicated controller host port.

Recommended action:

- No action is required.

468 - FPGA temperature threshold

468.1
Info

`The FPGA temperature returned to the normal range so the PCIe bus speed was restored. The data transfer rate (MB/s) was restored to 100%. (threshold temperature: <temperature> C, current temperature: <temperature> C, number of occurrences: <count>)`

This event indicates that a problem reported by event 469 is resolved.

Recommended action:

- No action is required.

469 - FPGA temperature threshold

469.1

Warning

The FPGA temperature exceeded the normal range so the PCIe bus speed was reduced. The data transfer rate (MB/s) was reduced. (threshold temperature: <temperature> C, current temperature: <temperature> C, number of occurrences: <count>)

The storage system is operational but I/O performance is reduced.

Recommended action:

- Check that the storage system's fans are running.
- Check that the ambient temperature is not too warm. For the normal operating range, see your product's installation documentation.
- Check for any obstructions to the airflow.
- If the enclosure has drawers, check that they are closed.
- Check that there is a module or blank plate in every module slot in the enclosure.
- If none of the above explanations apply, replace the controller module that logged the error.

When the problem is resolved, event 468 is logged.

476 - CPU temperature exceeded safe range

476.1

Warning

The CPU temperature exceeded the safe range so the CPU entered its self-protection state. IOPS were reduced. (percent of full IOPS: <numeric value>%, current temperature: <temperature> C, number of occurrences: <count>)

The storage system is operational but I/O performance is reduced.

Recommended action:

- Check that the storage system's fans are running.
- Check that the ambient temperature is not too warm. For the normal operating range, see your product's installation documentation.
- Check for any obstructions to the airflow.
- If the enclosure has drawers, check that they are closed.
- Check that there is a module or blank plate in every module slot in the enclosure.
- If none of the above explanations apply, replace the controller module that logged the error.

When the problem is resolved, event 478 is logged.

477 - CPU temperature exceeded normal

477.1

Info

The CPU temperature exceeded the normal range so the CPU speed was reduced. IOPS were reduced. (percent of full IOPS: <numeric value>%, current temperature: <temperature> C, number of occurrences: <count>)

The storage system is operational but I/O performance is reduced.

Recommended action:

- Check that the storage system's fans are running.
- Check that the ambient temperature is not too warm. For the normal operating range, see your product's installation documentation.
- Check for any obstructions to the airflow.
- If the enclosure has drawers, check that they are closed.
- Check that there is a module or blank plate in every module slot in the enclosure.
- If none of the above explanations apply, no further action is required.

When the problem is resolved, event 478 is logged.

478 - CPU temperature returned to normal

478.1

Info

The CPU temperature returned to the normal range so the CPU speed was restored. IOPS were restored to 100%. (current temperature: <temperature> C, number of occurrences: <count>)

This event indicates that a problem reported by event 476 or 477 is resolved.

Recommended action:

- No action is required.

479 - Flash flush/restore failure

479.1

Error

The controller that logged this event was unable to restore write-back cache data from its memory card. The partner controller will perform the operation.

This most likely indicates a memory card failure, but it could be caused by some other problem with the controller module. The Storage Controller that logged this event will be killed by its partner controller, which will use its own copy of the data to perform the flush or restore operation.

Recommended action:

- If this is the first time this event has been logged, restart the killed Storage Controller.
- If this event is logged again, shut down the Storage Controller and replace the controller module.

479.2

Error

```
The controller that logged this event was unable to restore write-back cache data from its
memory card.
```

This most likely indicates a memory card failure, but it could be caused by some other problem with the controller module. The Storage Controller that logged this event will be killed by its partner controller, which will use its own copy of the data to perform the flush or restore operation.

Recommended action:

- If this is the first time this event has been logged, restart the killed Storage Controller.
- If this event is logged again, shut down the Storage Controller and replace the controller module.

479.3

Error

```
The controller that logged this event was unable to flush write-back cache data to its memory
card. The partner controller will perform the operation.
```

This most likely indicates a memory card failure, but it could be caused by some other problem with the controller module. The Storage Controller that logged this event will be killed by its partner controller, which will use its own copy of the data to perform the flush or restore operation.

Recommended action:

- If this is the first time this event has been logged, restart the killed Storage Controller.
- If this event is logged again, shut down the Storage Controller and replace the controller module.

479.4

Error

```
The controller that logged this event was unable to flush write-back cache data to its memory
card.
```

This most likely indicates a memory card failure, but it could be caused by some other problem with the controller module. The Storage Controller that logged this event will be killed by its partner controller, which will use its own copy of the data to perform the flush or restore operation.

Recommended action:

- If this is the first time this event has been logged, restart the killed Storage Controller.
- If this event is logged again, shut down the Storage Controller and replace the controller module.

481 - Flash hardware detected error

481.1

Error

The periodic monitor of the memory card detected an error. The controller was put in write-through mode, which reduces I/O performance. (p1: <numeric value>)

None.

Recommended action:

- Restart the Storage Controller that logged this event.
- If this event is logged again, shut down the Storage Controller and replace the controller module.

482 - PCIe bus degraded

482.1

Warning

One of the internal PCIe buses is running with fewer lanes than it should. This reduces I/O performance. (bus: <numeric value>, expected lanes: <count>, actual lanes: <count>)

This event is the result of a hardware problem that has caused the controller to use fewer lanes. The system works with fewer lanes, but I/O performance is degraded.

Recommended action:

- Replace the controller module that logged this event.

484 - No global spares

484.1

Warning

All global spares were deleted. Only disk groups that have dedicated spares will start reconstruction automatically.

This situation puts data at increased risk because it will require user action to configure a disk as a dedicated or global spare before reconstruction can begin on the indicated disk group if a disk in that disk group fails in the future.

If the last global spare has been deleted or used for reconstruction, ALL disk groups that do not have at least one dedicated or global spare are at increased risk. Note that even though there may be global spares still available, they cannot be used for reconstruction of a disk group if that disk group uses larger-capacity disks or a different type of disk. Therefore, this event may be logged even when there are unused global spares. If the dynamic spares feature is enabled, this event will be logged even if there is an available disk that may be used for reconstruction.

Recommended action:

- Configure disks as dedicated spares or global spares.
  - For a dedicated spare, the disk must be of the same type as the other disks in the linear disk group and at least as large as the smallest-capacity disk in the linear disk group, and it should have the same or better performance.
  - For a global spare, it is best to choose a disk that is as big as or bigger than the largest disk of its type in the system and of equal or greater performance. If the system contains a mix of disk types (SSD, enterprise SAS, or midline SAS), there should be at least one global spare of each type (unless dedicated spares are used to protect every disk group of a given type, which will only apply to a linear storage configuration).

484.2

Warning

```
There is no dedicated or global spare that can be used for reconstructing this disk group. If a
disk in the disk group fails, reconstruction cannot start automatically. (disk group: <name>,
SN: <serial number>)
```

This situation puts data at increased risk because it will require user action to configure a disk as a dedicated or global spare before reconstruction can begin on the indicated disk group if a disk in that disk group fails in the future.

If the last global spare has been deleted or used for reconstruction, ALL disk groups that do not have at least one dedicated or global spare are at increased risk. Note that even though there may be global spares still available, they cannot be used for reconstruction of a disk group if that disk group uses larger-capacity disks or a different type of disk. Therefore, this event may be logged even when there are unused global spares. If the dynamic spares feature is enabled, this event will be logged even if there is an available disk that may be used for reconstruction.

Recommended action:

- Configure disks as dedicated spares or global spares.
  - For a dedicated spare, the disk must be of the same type as the other disks in the linear disk group and at least as large as the smallest-capacity disk in the linear disk group, and it should have the same or better performance.
  - For a global spare, it is best to choose a disk that is as big as or bigger than the largest disk of its type in the system and of equal or greater performance. If the system contains a mix of disk types (SSD, enterprise SAS, or midline SAS), there should be at least one global spare of each type (unless dedicated spares are used to protect every disk group of a given type, which will only apply to a linear storage configuration).

484.3

Warning

```
All global spares were deleted. Only disk groups that have dedicated spares will start
reconstruction automatically.
```

This situation puts data at increased risk because it will require user action to configure a disk as global spare before reconstruction can begin on the indicated disk group if a disk in that disk group fails in the future.

If the last global spare has been deleted or used for reconstruction, ALL disk groups that do not have at least one global spare are at increased risk. Note that even though there may be global spares still available, they cannot be used for reconstruction of a disk group if that disk group uses larger-capacity disks or a different type of disk. Therefore, this event may be logged even when there are unused global spares. If the dynamic spares feature is enabled, this event will be logged even if there is an available disk that may be used for reconstruction.

Recommended action:

- Configure disks as global spares.
- For a global spare, it is best to choose a disk that is as big as or bigger than the largest disk of its type in the system and of equal or greater performance. If the system contains a mix of disk types (SSD, enterprise SAS, or midline SAS), there should be at least one global spare of each type.

484.4

Warning

```
There is no global spare that can be used for reconstructing this disk group. If a disk in the
disk group fails, reconstruction cannot start automatically. (disk group: <name>, SN: <serial
number>)
```

This situation puts data at increased risk because it will require user action to configure a disk as global spare before reconstruction can begin on the indicated disk group if a disk in that disk group fails in the future.

If the last global spare has been deleted or used for reconstruction, ALL disk groups that do not have at least one global spare are at increased risk. Note that even though there may be global spares still available, they cannot be used for reconstruction of a disk group if that disk group uses larger-capacity disks or a different type of disk. Therefore, this event may be logged even when there are unused global spares. If the dynamic spares feature is enabled, this event will be logged even if there is an available disk that may be used for reconstruction.

Recommended action:

- Configure disks as global spares.
- For a global spare, it is best to choose a disk that is as big as or bigger than the largest disk of its type in the system and of equal or greater performance. If the system contains a mix of disk types (SSD, enterprise SAS, or midline SAS), there should be at least one global spare of each type.

485 - Disk group signature mismatch

485.1

Warning

A disk group was quarantined to prevent writing invalid data that may exist in the controller that logged this event. (disk group: <name>, SN: <serial number>)

This event is logged to report that the indicated disk group has been put in the quarantined offline state (status of QTOF) to prevent loss of data. The controller that logged this event has detected (via information saved in the disk group metadata) that it may contain outdated data that should not be written to the disk group. Data may be lost if you do not follow the recommended actions carefully. This situation is typically caused by removing a controller module without shutting it down first, then inserting a different controller module in its place. To avoid having this problem occur in the future, always shut down the Storage Controller in a controller module before removing it. This situation may also be caused by failure of the memory card, as indicated by event 204.

Recommended action:

- If event 204 is logged, follow the recommended actions for event 204.
- If event 204 is NOT logged, perform the following recommended actions:
  - If event 486 is not logged at approximately the same time as event 485, reinsert the removed controller module, shut it down, then remove it again.
  - If events 485 and 486 are both logged at approximately the same time, wait at least 5 minutes for the automatic recovery process to complete. Then sign in and confirm that both controller modules are operational. (You can determine if the controllers are operational with the CLI 'show controllers' command or with the WBI.) In most cases, the system will come back up and no further action is required. If both controller modules do not become operational in 5 minutes, data may have been lost. If both controllers are not operational, follow this recovery process:
    - Remove the controller module that first logged event 486.
    - Turn off the power for the controller enclosure, wait a few seconds, then turn it back on.
    - Wait for the controller module to restart, then sign in again.
    - Check the status of the disk groups. If any of the disk groups have a status of quarantined offline (QTOF), dequarantine those disk groups.
    - Reinsert the previously removed controller module. It should now restart successfully.

486 - Failover recovery initiated

486.1

Warning

`A recovery process was initiated to prevent writing invalid data that may exist in the controller that logged this event.`

The controller that logged this event has detected (via information saved in the disk group metadata) that it may contain outdated data that should not be written to the disk groups. The controller will log this event, restart the partner controller, wait 10 seconds, then kill itself. The partner controller will then unkill this controller and mirror the correct cache data to it. This procedure will, in most cases, allow all data to be correctly written without any loss of data and without writing any outdated data.

Recommended action:

- Wait at least 5 minutes for the automatic recovery process to complete. Then sign in and confirm that both controller modules are operational. (You can determine if the controllers are operational with the CLI 'show redundancy-mode' command.) In most cases, the system will come back up and no action is required.
- If both controller modules do not become operational in 5 minutes, see the recommended actions for event 485, which will be logged at approximately the same time.

487 - Historical performance statistic reset

487.1

Info

`Historical performance statistics were reset.`

None.

Recommended action:

- No action is required.

495 - Disk alternate path selected

495.1

Warning

The algorithm for best-path routing selected the alternate path to a disk because the I/O error count on the primary path reached its threshold. (disk: channel: <channel index>, ID: <device identifier>, SN: <serial number>, enclosure: <enclosure number>, slot: <slot number>)

The controller that logs this event indicates which channel (path) has the problem. For example, if the B controller logs the problem, the problem is in the chain of cables and expansion modules connected to the B controller module.

Recommended action:

- If this event is consistently logged for only one disk in an enclosure, perform the following actions:
  - Replace the disk.
  - If that does not resolve the problem, the fault is probably in the enclosure midplane. Replace the chassis FRU for the indicated enclosure.
- If this event is logged for more than one disk in an enclosure or disks in multiple enclosures, perform the following actions:
  - Check for disconnected SAS cables in the bad path. If no cables are disconnected, replace the cable connecting to the ingress port in the most-upstream enclosure with reported failures. If that does not resolve the problem, replace other cables in the bad path, one at a time until the problem is resolved.
  - If that does not resolve the problem, replace the expansion modules that are in the bad path. Begin with the most-upstream module that is in an enclosure with reported failures. If that does not resolve the problem, replace other expansion modules (and the controller module) upstream of the affected enclosure(s), one at a time until the problem is resolved.
  - If that still does not resolve the problem, the fault is probably in one of the enclosure midplanes. Replace the chassis FRU of the most-upstream enclosure with reported failures. If that does not resolve the problem and there is more than one enclosure with reported failures, replace the chassis FRU of the other enclosures with reported failures until the problem is resolved.

496 - Unsupported disk type

496.1

Warning

An unsupported disk vendor was found. (disk: channel: <channel index>, ID: <device identifier>, SN: <serial number>, enclosure: <enclosure number>, slot: <slot number>)

None.

Recommended action:

- Replace the disk with a supported type.

496.2

Warning

`An unsupported disk type was found. (disk: channel: <channel index>, ID: <device identifier>, SN: <serial number>, enclosure: <enclosure number>, slot: <slot number>)`

The disk vendor is not supported by this system.

Recommended action:

- Replace the disk with a disk that is supported by your system vendor.

501 - Enclosure not compatible

501.1

Error

`Detected an unsupported enclosure. (enclosure: <enclosure number>, WWN: <World Wide Name>, midplane type: <name>, EMP revision: <numeric value>)`

The Expander Controller firmware detected an incompatibility with the midplane type. As a preventive measure, disk access was disabled in the enclosure.

Recommended action:

- Replace the unsupported enclosure with a supported one.

503 - Bad enclosure PHY

503.1

Info

`The Intelligent BackEnd Error Monitor (IBEEM) has discovered that continuous errors are being reported for the indicated PHY. (channel: <channel index>, enclosure: <enclosure number>, PHY: <slot number>, type: <name>)`

IBEEM logged this event after monitoring the PHY for 30 minutes.

Recommended action:

- No action is required.

504 - Debug access changed

504.1

Info

`Service debug access to the system has been enabled by a user.`

Allowing service debug access may have security implications. After the diagnosis is complete you may want to disallow such access.

Recommended action:

- No action is required.

504.2

Info

```
Service debug access to the system has been disabled by a user.
```

Allowing service debug access may have security implications. After the diagnosis is complete you may want to disallow such access.

Recommended action:

- No action is required.

506 - Disk group addition started

506.1

Info

```
Addition of a disk group was started. (pool: <pool name>, SN: <serial number>) (disk group SN:
<serial number>, number of disk groups before addition: <count>, expected number of disk groups
after addition: <count>)
```

When this operation is complete, event 467 is logged.

Recommended action:

- No action is required.

507 - Link speed mismatch

507.1

Info

```
The link speed of a disk does not match the link speed that the enclosure is capable of. (disk:
channel: <channel index>, ID: <device identifier>, SN: <serial number>, enclosure: <enclosure
number>, slot: <slot number>) (enclosure speed: <link speed>, disk speed: <link speed>)
```

This event is logged when the auto-negotiated link speed is less than the maximum speed that the enclosure supports. The disk is functional, but I/O performance is reduced. This event may be logged for one disk channel or for both disk channels.

Recommended action:

- If the disk is a member of a non-fault-tolerant disk group (RAID 0 or non-RAID), move the data to a different disk group.
- Replace the disk with one of the same type (SSD, enterprise SAS, or midline SAS) and the same or greater capacity. For continued optimum I/O performance, the replacement disk should have performance that is the same as or better than the one it is replacing.

510 - FDE Lock key was set

510.1

Info

```
A user requested that the Full Disk Encryption lock key be set for the system. (lock key ID:
<identifier>)
```

None.

Recommended action:

- Be sure to record the lock key passphrase and the new lock ID.

511 - FDE import key was set

511.1

Info

A user requested that the Full Disk Encryption import lock key be set for the system. (import key ID: <identifier>)

This is normally used to import into the system an FDE disk that was locked by another system.

Recommended action:

- Ensure that the imported disk(s) are integrated into the system.

512 - FDE system secured

512.1

Info

A user requested that the storage system be secured using Full Disk Encryption.

Full Disk Encryption is now enabled. Disks removed from this system will not be readable unless they are imported into another system.

Recommended action:

- No action is required.

513 - FDE system repurposed

513.1

Info

A user requested that the storage system be repurposed with respect to Full Disk Encryption.

All disks have been repurposed and set to their initial factory states. FDE is no longer enabled on the system.

Recommended action:

- No action is required.

514 - FDE system keys cleared

514.1

Info

A user requested that the storage system's Full Disk Encryption lock and import keys be cleared.

I/O operations may continue as long as the system is not restarted.

Recommended action:

- If the system is restarted and access to data is intended, the lock key must be reinstated.

515 - FDE disk repurposed

515.1

Info

A user requested that a Full Disk Encryption disk be repurposed. (disk: channel: <channel index>, ID: <device identifier>, SN: <serial number>, enclosure: <enclosure number>, slot: <slot number>)

The disk was reset to its original factory state.

Recommended action:

- No action is required.

516 - FDE disk unavailable

516.1

Error

A disk was placed into the Full Disk Encryption unavailable state. (disk: channel: <channel index>, ID: <device identifier>, SN: <serial number>, enclosure: <enclosure number>, slot: <slot number>) (reason: <detailed error information>, recommended action: <text>, FDE-capable: <text>, FDE disk state: <description>)

The related event message 518, which indicates that a disk operation failed, may provide additional information.

Recommended action:

- See the recommended action specified in the event message.

517 - FDE disk not available

517.1

Info

A disk that was formerly in the Full Disk Encryption unavailable state is no longer unavailable. (disk: channel: <channel index>, ID: <device identifier>, SN: <serial number>, enclosure: <enclosure number>, slot: <slot number>) (FDE-capable: <text>, FDE disk state <description>)

The disk has returned to normal operations.

Recommended action:

- No action is required.

518 - FDE disk operation failed

518.1

Error

An operation failed for a Full Disk Encryption disk. (disk: channel: <channel index>, ID: <device identifier>, SN: <serial number>, enclosure: <enclosure number>, slot: <slot number>) (FDE request: <description>, FDE disk operation: <text>, FDE disk failure: <detailed error information>)

This event provides detail about the operation that failed.

Recommended action:

- The disk may need to be removed, imported, repurposed, or replaced.

519 - FDE system degraded

519.1

Error

The system changed to the Full Disk Encryption degraded state. (FDE state: <description>, number of unavailable disks: <count>)

Typically a disk-related condition has occurred.

Recommended action:

- One or more disks may need to be removed, imported, repurposed, or replaced.

520 - FDE system not degraded

520.1

Info

The system that was in the Full Disk Encryption degraded state is no longer degraded. (FDE state: <description>)

The system has returned to normal operations.

Recommended action:

- No action is required.

521 - FDE system memory error

521.1

Error

An error occurred accessing the midplane SEEPROM to store or fetch Full Disk Encryption keys. (status: <detailed error information>)

The midplane's memory is used to store the FDE lock key.

Recommended action:

- The midplane may need to be replaced if the error persists.

522 - Disk group scrub error

522.1

Warning

```
A scrub-disk-group job encountered an error. (disk group: <name>, SN: <serial number>) (disk
group LBA: <logical block address>)
```

The event message always includes the disk group name and the logical block address of the error within that disk group. If the block with an error falls within the LBA range used by a volume, the event message also includes the volume name and the LBA within that volume.

Recommended action:

Examine event 207 that was logged previously to this event. Follow the recommended actions for that event.

522.2

Warning

```
A scrub-disk-group job encountered an error. (disk group: <name>, SN: <serial number>, volume:
<serial number>) (disk group LBA: <logical block address>, volume LBA: <logical block address>)
```

The event message always includes the disk group name and the logical block address of the error within that disk group. If the block with an error falls within the LBA range used by a volume, the event message also includes the volume name and the LBA within that volume.

Recommended action:

Examine event 207 that was logged previously to this event. Follow the recommended actions for that event.

523 - Disk group scrub info

523.1

Info

```
Details associated with a scrub-disk-group job. (related event ID: <name>...<identifier>,
related event code: <identifier>, disk group start LBA: <logical block address>, disk group end
LBA: <logical block address>, type: <text>)
```

Recommended action:

Follow the recommended actions for the associated event.

523.2

Info

```
Details associated with a scrub-disk-group job. (related event ID: <name>...<identifier>,
related event code: <identifier>, disk group start LBA: <logical block address>, disk group end
LBA: <logical block address>, volume: <volume name>, volume start LBA: <logical block address>,
volume end LBA: <logical block address>, type: <text>)
```

Recommended action:

Follow the recommended actions for the associated event.

524 - Disk temperature critical threshold

524.1

Error

`A disk temperature sensor reached a critical threshold. (disk: channel: <channel index>, ID: <identifier>, SN: <serial number>, enclosure: <enclosure number>, slot: <slot number>) (measured temperature: <temperature> C) (threshold temperature: <temperature> C)`

A sensor monitored a temperature or voltage in the critical range. When the problem is resolved, event 47 is logged for the component that logged event 524.

If the event refers to a disk sensor, disk behavior may be unpredictable in this temperature range.

Check the event log to determine if more than one disk has reported this event.

- If multiple disks report this condition there could be a problem in the environment.
- If one disk reports this condition, there could be a problem in the environment or the disk has failed.

Recommended action:

- Check that the storage system's fans are running.
- Check that the ambient temperature is not too warm. The controller enclosure operating range is 5°C to 40°C (41°F to 104°F). The expansion enclosure operating range is 5°C to 40°C (41°F to 104°F).
- Check for any obstructions to the airflow.
- Check that there is a module or blank plate in every module slot in the enclosure.
- If none of the above explanations apply, replace the disk or controller module that logged the error.

524.2

Error

`An unknown sensor reached a critical threshold. (p1: <numeric value>, p2: <numeric value>)`

A sensor monitored a temperature or voltage in the critical range. When the problem is resolved, event 47 is logged for the component that logged event 524.

If the event refers to a disk sensor, disk behavior may be unpredictable in this temperature range.

Check the event log to determine if more than one disk has reported this event.

- If multiple disks report this condition there could be a problem in the environment.
- If one disk reports this condition, there could be a problem in the environment or the disk has failed.

Recommended action:

- Check that the storage system's fans are running.
- Check that the ambient temperature is not too warm. The controller enclosure operating range is 5°C to 40°C (41°F to 104°F). The expansion enclosure operating range is 5°C to 40°C (41°F to 104°F).
- Check for any obstructions to the airflow.
- Check that there is a module or blank plate in every module slot in the enclosure.
- If none of the above explanations apply, replace the disk or controller module that logged the error.

525 - Drawer shutdown

525.1

Info

`A drawer has been stopped. (enclosure: <enclosure number>, drawer: <drawer number>, enclosure WWN: <World Wide Name>)`

The drawer has powered down and may be safely removed. A rescan must complete before the updated drawer information will be available.

Recommended action:

- Restart the drawer using the 'start drawer' command, or remove the drawer for replacement.

526 - Drawer restarted

526.1

Info

`A drawer has been restarted. (enclosure: <enclosure number>, drawer: <drawer number>, enclosure WWN: <World Wide Name>)`

The drawer has powered up. Disks in the drawer may take a few minutes to spin up. A rescan must complete before the updated drawer information will be available.

Recommended action:

- No action is required.

527 - EC firmware incompatible

527.1

Error

`Expander Controller (EC) firmware is incompatible with the enclosure. (enclosure: <enclosure number>, enclosure WWN: <World Wide Name>)`

As a preventative measure, the Expander Controller (EC) disabled all PHYs and reported the short enclosure status page in the supported diagnostic list.

Recommended action:

- Upgrade the controller module to the latest supported bundle version.

528 - EC firmware incompatible

528.1

Error

```
Expander Controller (EC) firmware detected that the partner Expander Controller (EC) firmware
is incompatible with the enclosure. (enclosure: <enclosure number>, enclosure WWN: <World Wide
Name>)
```

As a preventative measure, the Expander Controller (EC) disabled all PHYs and reported the short enclosure status page in the supported diagnostic list.

Recommended action:

- Upgrade the partner controller module to the latest supported bundle revision.

529 - EC incompatible

529.1

Error

```
The local Expander Controller (EC) is incompatible with the enclosure. (enclosure: <enclosure
number>, enclosure WWN: <World Wide Name>)
```

As a preventative measure, the Expander Controller (EC) disabled all PHYs and reported the short enclosure status page in the supported diagnostic list.

Recommended action:

- Replace the controller module with one that is compatible with the enclosure.

530 - Partner EC in reset loop

530.1

Error

```
The local Expander Controller (EC) detected a level of incompatibility with the partner
Expander Controller (EC). This incompatibility could be due to unsupported hardware or
firmware. (enclosure: <enclosure number>, enclosure WWN: <World Wide Name>)
```

As a preventative measure, the local Expander Controller (EC) is holding the partner Expander Controller (EC) in a reset loop.

Recommended action:

- Remove the partner controller module from the enclosure. Boot the partner controller module in single-controller mode in a separate enclosure (without the controller module that reported this event). Load the latest compatible bundle version. If the version fails to load, replace the partner controller module.

533 - Management Controller POST

533.1

Info

Component <text> is present and operational.

None.

Recommended action:

- No action is required.

533.2

Error

Component <text> is present and operational.

None.

Recommended action:

If the event indicates the test failed, replace the controller module that logged this event.

533.3

Info

Component <text> is unavailable. (failure reason: <numeric value>, <numeric value>)

None.

Recommended action:

- No action is required.

533.4

Error

Component <text> is unavailable. (failure reason: <numeric value>, <numeric value>)

None.

Recommended action:

If the event indicates the test failed, replace the controller module that logged this event.

539 - Disk group recovered

539.1

Info

For the indicated disk group, which was corrupted, the 'recreate' step of the disk group recovery was not successful. (disk group: <name>, SN: <serial number>) (A controller had an internal error, error code: <error code>))

None.

Recommended action:

- Verify that expected volumes have been recovered.

539.3

Warning

For the indicated disk group, which was corrupted, the 'recreate' step of the disk group recovery succeeded. (disk group: <name>, SN: <serial number>) (RAID<numeric value>, number of disks: <numeric value>, <numeric value> disks present)

None.

Recommended action:

- Verify that expected volumes have been recovered.

539.5

Warning

For the indicated disk group, which was corrupted, the 'recreate' step of the disk group recovery succeeded. (disk group: <name>, SN: <serial number>) (RAID6, number of disks: <numeric value>, chunk size: <numeric value>KB, <numeric value> disks present)

None.

Recommended action:

- Verify that expected volumes have been recovered.

539.7

Warning

For the indicated disk group, which was corrupted, the 'recreate' step of the disk group recovery succeeded. (disk group: <name>, SN: <serial number>) (non-RAID, number of disks: <numeric value>, <numeric value> disks present)

None.

Recommended action:

- Verify that expected volumes have been recovered.

539.9

Warning

For the indicated disk group, which was corrupted, the 'recreate' step of the disk group recovery succeeded. (disk group: <name>, SN: <serial number>) (RAID10, number of disks: <numeric value>, chunk size: <numeric value>KB, <numeric value> disks present)

None.

Recommended action:

- Verify that expected volumes have been recovered.

539.13
Warning

For the indicated disk group, which was corrupted, the 'recreate' step of the disk group recovery succeeded. (disk group: <name>, SN: <serial number>) (RAID50, number of disks: <number of low levels>x<number of drives per low level>, chunk size: <numeric value>KB, <numeric value> disks present)

None.

Recommended action:

- Verify that expected volumes have been recovered.

539.15
Warning

For the indicated disk group, which was corrupted, the 'recreate' step of the disk group recovery succeeded. (disk group: <name>, SN: <serial number>) (unknown RAID type, number of disks: <numeric value>, chunk size: <numeric value>KB, <numeric value> disks present)

None.

Recommended action:

- Verify that expected volumes have been recovered.

540 - Volume recovered

540.1
Info

The indicated volume, which was corrupted, has been recovered. (disk group: <name>, volume: <volume name>, SN: <serial number>)

None.

Recommended action:

- After verifying volume recovery, complete disk group recovery by running the 'recover disk-group complete' command.

541 - Disk group recovered

541.1
Info

For the indicated disk group, which was corrupted, the 'complete' step of the disk group recovery succeeded. (disk group: <name>, SN: <serial number>).

Recommended action:

- No action is required.

541.2

Info

For the indicated disk group, which was corrupted, the 'complete' step of the disk group recovery succeeded. (disk group: <name>, SN: <serial number>). Reconstruct was started.

Recommended action:

- No action is required.

544 - Scrub disk group duration exceeded

544.1

Info

A disk group scrub operation exceeded its duration goal by 20%. (disk group: <name>, SN: <serial number>, duration goal <time> hours, actual elapsed <time> hours)

The system will attempt to meet the scrub duration goals by adjusting system resources, but factors such as the amount of data or abnormally high host activity may cause scrub operations to exceed the requested duration.

Recommended action:

- If this event occurs repeatedly, the scrub duration goal should be increased to increase the likelihood that the goal can be met.

545 - Using legacy midplane

545.1

Warning

A controller with a newer generation PCIE bus is connected to a midplane with an older generation PCIE bus resulting in degraded performance. (expected generation: <count>, actual generation: <count>)

None.

Recommended action:

- To achieve better performance, replace the enclosure's legacy chassis FRU with the latest version of the FRU.

545.2

Info

A controller with a newer generation PCIE bus is connected to a midplane with an older generation PCIE bus resulting in degraded performance. (expected generation: <count>, actual generation: <count>)

None.

Recommended action:

- To achieve better performance, replace the enclosure's legacy chassis FRU with the latest version of the FRU.

546 - Incompatible controller

546.1

Error

`Controller module <name> is not compatible with the host port configuration of this system.`

None.

Recommended action:

- Replace the killed controller module with a controller module that has the same host port configuration as the surviving controller module.

548 - Reconstruct disk group failed

548.1

Warning

`Disk group full reconstruction failed. <detailed error information> (disk group: <name>, SN: <serial number>) (error code: <error code>)`

When a disk fails, reconstruction is performed using a spare disk. In this case, the reconstruction operation failed because unreadable data (uncorrectable media error) exists in at least one other disk in the disk group. Because of this, a portion of the data cannot be reconstructed.

Recommended action:

- If you do not have a backup copy of the data in the disk group, make a backup.
- Note the configuration of the disk group, such as its size and host mappings.
- Look for another event logged at approximately the same time that indicates a disk failure, such as event 8, 55, 58, or 412. Follow the recommended actions for that event.
- Remove the disk group.
- Re-add the disk group.
- Restore the data from a backup to a new disk group.

548.2

Warning

`Disk group quick rebuild failed. <detailed error information> (disk group: <name>, SN: <serial number>) (error code: <error code>)`

When a disk fails, reconstruction is performed using a spare disk. In this case, the reconstruction operation failed because unreadable data (uncorrectable media error) exists in at least one other disk in the disk group. Because of this, a portion of the data cannot be reconstructed.

Recommended action:

- If you do not have a backup copy of the data in the disk group, make a backup.
- Note the configuration of the disk group, such as its size and host mappings.
- Look for another event logged at approximately the same time that indicates a disk failure, such as event 8, 55, 58, or 412. Follow the recommended actions for that event.
- Remove the disk group.
- Re-add the disk group.
- Restore the data from a backup to a new disk group.

548.3

Warning

`Disk group preemptive reconstruction failed. <detailed error information> (disk group: <name>, SN: <serial number>) (error code: <error code>)`

When a disk fails, reconstruction is performed using a spare disk. In this case, the reconstruction operation failed because unreadable data (uncorrectable media error) exists in at least one other disk in the disk group. Because of this, a portion of the data cannot be reconstructed.

Recommended action:

- If you do not have a backup copy of the data in the disk group, make a backup.
- Note the configuration of the disk group, such as its size and host mappings.
- Look for another event logged at approximately the same time that indicates a disk failure, such as event 8, 55, 58, or 412. Follow the recommended actions for that event.
- Remove the disk group.
- Re-add the disk group.
- Restore the data from a backup to a new disk group.

548.4

Warning

`Disk group preemptive quick reconstruction failed. <detailed error information> (disk group: <name>, SN: <serial number>) (error code: <error code>)`

When a disk fails, reconstruction is performed using a spare disk. In this case, the reconstruction operation failed because unreadable data (uncorrectable media error) exists in at least one other disk in the disk group. Because of this, a portion of the data cannot be reconstructed.

Recommended action:

- If you do not have a backup copy of the data in the disk group, make a backup.
- Note the configuration of the disk group, such as its size and host mappings.
- Look for another event logged at approximately the same time that indicates a disk failure, such as event 8, 55, 58, or 412. Follow the recommended actions for that event.
- Remove the disk group.
- Re-add the disk group.
- Restore the data from a backup to a new disk group.

548.8

Warning

`Preemptive quick reconstruction of degraded capacity within an ADAPT ...disk group failed. <detailed error information> (disk group: <name>, SN: <serial number>) (error code: <error code>)`

When a disk fails, reconstruction is performed using a spare disk. In this case, the reconstruction operation failed because unreadable data (uncorrectable media error) exists in at least one other disk in the disk group. Because of this, a portion of the data cannot be reconstructed.

Recommended action:

- If you do not have a backup copy of the data in the disk group, make a backup.
- Note the configuration of the disk group, such as its size and host mappings.
- Look for another event logged at approximately the same time that indicates a disk failure, such as event 8, 55, 58, or 412. Follow the recommended actions for that event.
- Remove the disk group.
- Re-add the disk group.
- Restore the data from a backup to a new disk group.

548.9

Warning

`Full reconstruction of critical capacity within an ADAPT ...disk group failed. <detailed error information> (disk group: <name>, SN: <serial number>) (error code: <error code>)`

When a disk fails, reconstruction is performed using a spare disk. In this case, the reconstruction operation failed because unreadable data (uncorrectable media error) exists in at least one other disk in the disk group. Because of this, a portion of the data cannot be reconstructed.

Recommended action:

- If you do not have a backup copy of the data in the disk group, make a backup.
- Note the configuration of the disk group, such as its size and host mappings.
- Look for another event logged at approximately the same time that indicates a disk failure, such as event 8, 55, 58, or 412. Follow the recommended actions for that event.
- Remove the disk group.
- Re-add the disk group.
- Restore the data from a backup to a new disk group.

548.10

Warning

`Quick rebuild of critical capacity within an ADAPT ...disk group failed. <detailed error information> (disk group: <name>, SN: <serial number>) (error code: <error code>)`

When a disk fails, reconstruction is performed using a spare disk. In this case, the reconstruction operation failed because unreadable data (uncorrectable media error) exists in at least one other disk in the disk group. Because of this, a portion of the data cannot be reconstructed.

Recommended action:

- If you do not have a backup copy of the data in the disk group, make a backup.
- Note the configuration of the disk group, such as its size and host mappings.
- Look for another event logged at approximately the same time that indicates a disk failure, such as event 8, 55, 58, or 412. Follow the recommended actions for that event.
- Remove the disk group.
- Re-add the disk group.
- Restore the data from a backup to a new disk group.

548.11

Warning

`Preemptive reconstruction of critical capacity within an ADAPT ...disk group failed. <detailed error information> (disk group: <name>, SN: <serial number>) (error code: <error code>)`

When a disk fails, reconstruction is performed using a spare disk. In this case, the reconstruction operation failed because unreadable data (uncorrectable media error) exists in at least one other disk in the disk group. Because of this, a portion of the data cannot be reconstructed.

Recommended action:

- If you do not have a backup copy of the data in the disk group, make a backup.
- Note the configuration of the disk group, such as its size and host mappings.
- Look for another event logged at approximately the same time that indicates a disk failure, such as event 8, 55, 58, or 412. Follow the recommended actions for that event.
- Remove the disk group.
- Re-add the disk group.
- Restore the data from a backup to a new disk group.

548.12

Warning

`Preemptive quick reconstrution of critical capacity within an ADAPT ...disk group failed. <detailed error information> (disk group: <name>, SN: <serial number>) (error code: <error code>)`

When a disk fails, reconstruction is performed using a spare disk. In this case, the reconstruction operation failed because unreadable data (uncorrectable media error) exists in at least one other disk in the disk group. Because of this, a portion of the data cannot be reconstructed.

Recommended action:

- If you do not have a backup copy of the data in the disk group, make a backup.
- Note the configuration of the disk group, such as its size and host mappings.
- Look for another event logged at approximately the same time that indicates a disk failure, such as event 8, 55, 58, or 412. Follow the recommended actions for that event.
- Remove the disk group.
- Re-add the disk group.
- Restore the data from a backup to a new disk group.

549 - Recovered internal processor fault

549.1

Critical

`Recovery from internal processor fault detected on controller.`

None.

Recommended action:

- On the first occurrence of this event, no action is required. If this event occurs a second time, replace the controller module.

550 - Unreliable disk read path

550.1

Critical

`Unreliable disk read path detected. Error Path ID: <identifier> (error code: <error code>) (disk group: <name>, SN: <serial number>)`

The read data path between the Storage Controller and the disk drives was detected to be unreliable. The Storage Controller took action to correct this.

Recommended action:

- Replace the controller.

550.2

Critical

`Unreliable disk read path detected. Error Path ID: <identifier> (error code: <error code>) (<name>)`

The read data path between the Storage Controller and the disk drives was detected to be unreliable. The Storage Controller took action to correct this.

Recommended action:

- Replace the controller.

551 - Power supply status changed

551.1

Error

An Enclosure Management Processor (EMP) reported an alert condition on a power supply. Type: <detailed error information>. (enclosure: <enclosure number>, WWN: <World Wide Name>) power supply <numeric value>, power supply status: <text>

An EMP reported one of the following for a power supply unit (PSU):

- The PSU is unable to communicate with the EMP.
- The PSU in an enclosure does not have power supplied to it or has a hardware failure.
- The PSU is running with corrupted firmware.

Recommended action:

- If the EMP is unable to communicate with the indicated PSU.
  - Wait for at least 10 minutes and check if the error resolves.
  - If the error persists, check that all modules in the enclosure are fully seated in their slots and that their latches, if any, are locked.
  - If this does not resolve the issue, note down the PSU. Ensure the partner PSU is not degraded. If the partner PSU is degraded, contact technical support.
  - If the partner PSU is not degraded, remove and reinsert the indicated PSU.
  - If this does not resolve the issue, the indicated FRU has probably failed and should be replaced.
- If one of the PSUs in an enclosure does not have power supplied to it or has a hardware failure.
  - Check that the indicated PSU is fully seated in its slot and that the PSU's latches, if any, are locked.
  - Check that each PSU has its switch turned on (if equipped with a switch).
  - Check that each power cable is firmly plugged into both the PSU and a functional electrical outlet.
  - If none of the above resolves the issue, the indicated PSU has probably failed and should be replaced.
- If a PSU is running with corrupted firmware:
  - The indicated PSU has failed and should be replaced.

When the problem is resolved, an event with the same code will be logged with Resolved severity.

551.2

Warning

An Enclosure Management Processor (EMP) reported an alert condition on a power supply. Type: <detailed error information>. (enclosure: <enclosure number>, WWN: <World Wide Name>) power supply <numeric value>, power supply status: <text>

An EMP reported that a power supply unit (PSU) has been uninstalled.

Recommended action:

- Check that the indicated PSU is in the indicated enclosure.
- If the PSU is not in the enclosure, install a PSU immediately.
- If the PSU is in the enclosure, ensure that the power supply is fully seated in its slot and that its latch is locked.
- If none of the above resolves the issue, the indicated FRU has failed and should be replaced.

When the problem is resolved, an event with the same code will be logged with Resolved severity.

551.3

Resolved

An Enclosure Management Processor (EMP) reported an alert condition on a power supply. Type: <detailed error information>. (enclosure: <enclosure number>, WWN: <World Wide Name>) power supply <numeric value>, power supply status: <text>

A SES alert for a power supply in the indicated enclosure has been resolved.

Recommended action:

- No action is required.

552 - Cooling element status changed

552.1

Error

```
An Enclosure Management Processor (EMP) reported an alert condition on a fan. Type: <detailed
error information>. (enclosure: <enclosure number>, WWN: <World Wide Name>) fan <numeric
value>...<text>, fan status: <text>
```

An EMP reported an alert condition.

- A hardware failure has been detected and all fans in the indicated FRU have failed.
- The fan is unable to communicate with the EMP.

Recommended action:

- If a hardware failure has been detected and all fans in the indicated FRU have failed.
  - Inspect the system health information to determine which FRU contains the affected fans. Event 551 or 558 should give further information on the containing FRUs.
  - Replace the containing FRUs.
- The fan is unable to communicate with the EMP.
  - Wait for at least 10 minutes and check if the error resolves.
  - If the error persists, check that all modules in the enclosure are fully seated in their slots and that their latches, if any, are locked.
  - If this does not resolve the issue, note down the FRU. Ensure the partner FRU is not degraded. If the partner FRU is degraded, contact technical support.
  - If the partner FRU is not degraded, remove and reinsert the indicated FRU.
  - If this does not resolve the issue, the indicated FRU has probably failed and should be replaced.

When the problem is resolved, an event with the same code will be logged with Resolved severity.

552.2

Warning

An Enclosure Management Processor (EMP) reported an alert condition on a fan. Type: <detailed error information>. (enclosure: <enclosure number>, WWN: <World Wide Name>) fan <numeric value>...<text>, fan status: <text>

An EMP reported one of the following:

- A fan in the indicated FRU has been uninstalled.
- A fan in the indicated FRU has failed and fan redundancy for the FRU has been lost.

Recommended action:

- If a fan in the indicated FRU has been uninstalled.
    - Check that the indicated FRU is in the indicated enclosure.
        - If the FRU is not in the enclosure, install the appropriate FRU immediately.
        - If the FRU is in the enclosure, ensure that the FRU is fully seated in its slot and that its latch is locked.
    - If none of the above resolves the issue, the indicated FRU has failed and should be replaced.
- If a fan in the indicated FRU has failed and fan redundancy for the FRU has been lost:
    - The indicated FRU has failed and should be replaced.

When the problem is resolved, an event with the same code will be logged with Resolved severity.

552.3

Resolved

An Enclosure Management Processor (EMP) reported an alert condition on a fan. Type: <detailed error information>. (enclosure: <enclosure number>, WWN: <World Wide Name>) fan <numeric value>...<text>, fan status: <text>

A SES alert for a fan in the indicated enclosure has been resolved.

Recommended action:

- No action is required.

553 - Temperature sensor status changed

553.1

Error

An Enclosure Management Processor (EMP) reported an alert condition on a temperature sensor. Type: <detailed error information>. (enclosure: <enclosure number>, WWN: <World Wide Name>) temperature sensor for <text>, sensor status: <text>, temperature: <temperature> C

A temperature sensor reported an alert condition.

- A temperature sensor is outside critical temperature threshold in the indicated FRU.
- The temperature sensor is not able to communicate with the EMP.

Recommended action:

- If temperature sensor is outside critical temperature threshold in the indicated FRU.
  - Check that the ambient temperature is not too warm. For the normal operating range, see your product's installation guide.
  - Check for any obstructions to the airflow.
  - Check that all modules in the enclosure are fully seated in their slots and that their latches, if any, are locked.
  - Check that all fans in the enclosure are running.
  - Check that there is a module or blank plate in every module slot in the enclosure.
  - If none of the above resolve the issue, the indicated FRU has probably failed and should be replaced.
- The temperature sensor is not able to communicate with the EMP.
  - Wait for at least 10 minutes and check if the error resolves.
  - If the error persists, check that all modules in the enclosure are fully seated in their slots and that their latches, if any, are locked.
  - If this does not resolve the issue, note down the FRU. Ensure the partner FRU is not degraded. If the partner FRU is degraded, contact technical support.
  - For all FRU types except the enclosure, if the partner FRU is not degraded, remove and reinsert the indicated FRU.
  - If the indicated FRU is the enclosure, set up a preventive maintenance window and power cycle the enclosure at that time.
  - If this does not resolve the issue, the indicated FRU has probably failed and should be replaced.

When the problem is resolved, an event with the same code will be logged with Resolved severity.

553.2

Warning

```
An Enclosure Management Processor (EMP) reported an alert condition on a temperature sensor.
Type: <detailed error information>. (enclosure: <enclosure number>, WWN: <World Wide Name>)
temperature sensor for <text>, sensor status: <text>, temperature: <temperature> C
```

A temperature sensor is not within normal operating temperature thresholds but is within safe operating limits; or, a temperature sensor has been uninstalled.

Recommended action:

- If a temperature sensor has exceeded the normal operating range but is within safe operating limits.
    - Check that the ambient temperature is not too warm. For the normal operating range, see your product's installation guide.
    - Check for any obstructions to the airflow.
- If a temperature sensor has been uninstalled:
    - Check that the indicated FRU is in the indicated enclosure.
- If the FRU is not in the enclosure, install the FRU immediately.
- If the FRU is in the enclosure, ensure that the FRU is fully seated in its slot and that its latches, if any, are locked.

When the problem is resolved, an event with the same code will be logged with Resolved severity.

553.3

Resolved

```
An Enclosure Management Processor (EMP) reported an alert condition on a temperature sensor.
Type: <detailed error information>. (enclosure: <enclosure number>, WWN: <World Wide Name>)
temperature sensor for <text>, sensor status: <text>, temperature: <temperature> C
```

A SES alert for a temperature sensor in the indicated enclosure has been resolved.

Recommended action:

- No action is required.

553.4

Error

An Enclosure Management Processor (EMP) reported an alert condition on a temperature sensor.
Type: <detailed error information>. (enclosure: <enclosure number>, WWN: <World Wide Name>,
drawer: <drawer number>) temperature sensor for <text>, sensor status: <text>, temperature:
<temperature> C

A temperature sensor reported an alert condition.

- A temperature sensor is outside critical temperature threshold in the indicated FRU.
- The temperature sensor is not able to communicate with the EMP.

Recommended action:

- If temperature sensor is outside critical temperature threshold in the indicated FRU.
  - Check that the ambient temperature is not too warm. For the normal operating range, see your product's installation guide.
  - Check for any obstructions to the airflow.
  - Check that all modules in the enclosure are fully seated in their slots and that their latches, if any, are locked.
  - Check that all fans in the enclosure are running.
  - Check that there is a module or blank plate in every module slot in the enclosure.
  - If none of the above resolve the issue, the indicated FRU has probably failed and should be replaced.
- The temperature sensor is not able to communicate with the EMP.
  - Wait for at least 10 minutes and check if the error resolves.
  - If the error persists, check that all modules in the enclosure are fully seated in their slots and that their latches, if any, are locked.
  - If this does not resolve the issue, note down the FRU. Ensure the partner FRU is not degraded. If the partner FRU is degraded, contact technical support.
  - For all FRU types except the enclosure, if the partner FRU is not degraded, remove and reinsert the indicated FRU.
  - If the indicated FRU is the enclosure, set up a preventive maintenance window and power cycle the enclosure at that time.
  - If this does not resolve the issue, the indicated FRU has probably failed and should be replaced.

When the problem is resolved, an event with the same code will be logged with Resolved severity.

553.5

Warning

```
An Enclosure Management Processor (EMP) reported an alert condition on a temperature sensor.
Type: <detailed error information>. (enclosure: <enclosure number>, WWN: <World Wide Name>,
drawer: <drawer number>) temperature sensor for <text>, sensor status: <text>, temperature:
<temperature> C
```

A temperature sensor is not within normal operating temperature thresholds but is within safe operating limits; or, a temperature sensor has been uninstalled.

Recommended action:

- If a temperature sensor has exceeded the normal operating range but is within safe operating limits.
    - Check that the ambient temperature is not too warm. For the normal operating range, see your product's installation guide.
    - Check for any obstructions to the airflow.
- If a temperature sensor has been uninstalled:
    - Check that the indicated FRU is in the indicated enclosure.
- If the FRU is not in the enclosure, install the FRU immediately.
- If the FRU is in the enclosure, ensure that the FRU is fully seated in its slot and that its latches, if any, are locked.

When the problem is resolved, an event with the same code will be logged with Resolved severity.

553.6

Resolved

```
An Enclosure Management Processor (EMP) reported an alert condition on a temperature sensor.
Type: <detailed error information>. (enclosure: <enclosure number>, WWN: <World Wide Name>,
drawer: <drawer number>) temperature sensor for <text>, sensor status: <text>, temperature:
<temperature> C
```

A SES alert for a temperature sensor in the indicated enclosure has been resolved.

Recommended action:

- No action is required.

553.7

Error

An Enclosure Management Processor (EMP) reported an alert condition on a temperature sensor.
Type: <detailed error information>. (enclosure: <enclosure number>, WWN: <World Wide Name>)
temperature sensor for <text>, sensor status: <text>

A temperature sensor reported an alert condition.

- A temperature sensor is outside critical temperature threshold in the indicated FRU.
- The temperature sensor is not able to communicate with the EMP.

Recommended action:

- If temperature sensor is outside critical temperature threshold in the indicated FRU.
  - Check that the ambient temperature is not too warm. For the normal operating range, see your product's installation guide.
  - Check for any obstructions to the airflow.
  - Check that all modules in the enclosure are fully seated in their slots and that their latches, if any, are locked.
  - Check that all fans in the enclosure are running.
  - Check that there is a module or blank plate in every module slot in the enclosure.
  - If none of the above resolve the issue, the indicated FRU has probably failed and should be replaced.
- The temperature sensor is not able to communicate with the EMP.
  - Wait for at least 10 minutes and check if the error resolves.
  - If the error persists, check that all modules in the enclosure are fully seated in their slots and that their latches, if any, are locked.
  - If this does not resolve the issue, note down the FRU. Ensure the partner FRU is not degraded. If the partner FRU is degraded, contact technical support.
  - For all FRU types except the enclosure, if the partner FRU is not degraded, remove and reinsert the indicated FRU.
  - If the indicated FRU is the enclosure, set up a preventive maintenance window and power cycle the enclosure at that time.
  - If this does not resolve the issue, the indicated FRU has probably failed and should be replaced.

When the problem is resolved, an event with the same code will be logged with Resolved severity.

553.8

Warning

```
An Enclosure Management Processor (EMP) reported an alert condition on a temperature sensor.
Type: <detailed error information>. (enclosure: <enclosure number>, WWN: <World Wide Name>)
temperature sensor for <text>, sensor status: <text>
```

A temperature sensor is not within normal operating temperature thresholds but is within safe operating limits; or, a temperature sensor has been uninstalled.

Recommended action:

- If a temperature sensor has exceeded the normal operating range but is within safe operating limits.
  - Check that the ambient temperature is not too warm. For the normal operating range, see your product's installation guide.
  - Check for any obstructions to the airflow.
- If a temperature sensor has been uninstalled:
  - Check that the indicated FRU is in the indicated enclosure.
- If the FRU is not in the enclosure, install the FRU immediately.
- If the FRU is in the enclosure, ensure that the FRU is fully seated in its slot and that its latches, if any, are locked.

When the problem is resolved, an event with the same code will be logged with Resolved severity.

553.9

Resolved

```
An Enclosure Management Processor (EMP) reported an alert condition on a temperature sensor.
Type: <detailed error information>. (enclosure: <enclosure number>, WWN: <World Wide Name>)
temperature sensor for <text>, sensor status: <text>
```

A SES alert for a temperature sensor in the indicated enclosure has been resolved.

Recommended action:

- No action is required.

553.10

Error

```
An Enclosure Management Processor (EMP) reported an alert condition on a temperature sensor.
Type: <detailed error information>. (enclosure: <enclosure number>, WWN: <World Wide Name>,
drawer: <drawer number>) temperature sensor for <text>, sensor status: <text>
```

A temperature sensor reported an alert condition.

- A temperature sensor is outside critical temperature threshold in the indicated FRU.
- The temperature sensor is not able to communicate with the EMP.

Recommended action:

- If temperature sensor is outside critical temperature threshold in the indicated FRU.
  - Check that the ambient temperature is not too warm. For the normal operating range, see your product's installation guide.
  - Check for any obstructions to the airflow.
  - Check that all modules in the enclosure are fully seated in their slots and that their latches, if any, are locked.
  - Check that all fans in the enclosure are running.
  - Check that there is a module or blank plate in every module slot in the enclosure.
  - If none of the above resolve the issue, the indicated FRU has probably failed and should be replaced.
- The temperature sensor is not able to communicate with the EMP.
  - Wait for at least 10 minutes and check if the error resolves.
  - If the error persists, check that all modules in the enclosure are fully seated in their slots and that their latches, if any, are locked.
  - If this does not resolve the issue, note down the FRU. Ensure the partner FRU is not degraded. If the partner FRU is degraded, contact technical support.
  - For all FRU types except the enclosure, if the partner FRU is not degraded, remove and reinsert the indicated FRU.
  - If the indicated FRU is the enclosure, set up a preventive maintenance window and power cycle the enclosure at that time.
  - If this does not resolve the issue, the indicated FRU has probably failed and should be replaced.

When the problem is resolved, an event with the same code will be logged with Resolved severity.

553.11

Warning

`An Enclosure Management Processor (EMP) reported an alert condition on a temperature sensor. Type: <detailed error information>. (enclosure: <enclosure number>, WWN: <World Wide Name>, drawer: <drawer number>) temperature sensor for <text>, sensor status: <text>`

A temperature sensor is not within normal operating temperature thresholds but is within safe operating limits; or, a temperature sensor has been uninstalled.

Recommended action:

- If a temperature sensor has exceeded the normal operating range but is within safe operating limits.
  - Check that the ambient temperature is not too warm. For the normal operating range, see your product's installation guide.
  - Check for any obstructions to the airflow.
- If a temperature sensor has been uninstalled:
  - Check that the indicated FRU is in the indicated enclosure.
- If the FRU is not in the enclosure, install the FRU immediately.
- If the FRU is in the enclosure, ensure that the FRU is fully seated in its slot and that its latches, if any, are locked.

When the problem is resolved, an event with the same code will be logged with Resolved severity.

553.12

Resolved

`An Enclosure Management Processor (EMP) reported an alert condition on a temperature sensor. Type: <detailed error information>. (enclosure: <enclosure number>, WWN: <World Wide Name>, drawer: <drawer number>) temperature sensor for <text>, sensor status: <text>`

A SES alert for a temperature sensor in the indicated enclosure has been resolved.

Recommended action:

- No action is required.

554 - Voltage sensor status changed

554.1

Error

```
An Enclosure Management Processor (EMP) reported an alert condition on a voltage sensor. Type:
<detailed error information>. (enclosure: <enclosure number>, WWN: <World Wide Name>) voltage
sensor for <text>, sensor status: <text>, voltage: <voltage> V
```

A voltage sensor reported an alert condition.

- A voltage sensor is outside a critical voltage threshold in the indicated FRU.
  - A voltage sensor is not able to communicate with the EMP.

Recommended action:

- If A voltage sensor is outside a critical voltage threshold in the indicated FRU.
  - Check that all modules in the enclosure are fully seated in their slots and that their latches, if any, are locked.
  - If this does not resolve the issue, the indicated FRU has probably failed and should be replaced.
- If the voltage sensor is not able to communicate with the EMP.
  - Wait for at least 10 minutes and check if the error resolves.
  - If the error persists, check that all modules in the enclosure are fully seated in their slots and that their latches, if any, are locked.
  - If this does not resolve the issue, note down the FRU. Ensure the partner FRU is not degraded. If the partner FRU is degraded, contact technical support.
  - For all FRU types except the enclosure, if the partner FRU is not degraded, remove and reinsert the indicated FRU.
  - If the indicated FRU is the enclosure, set up a preventive maintenance window and power cycle the enclosure at that time.
  - If this does not resolve the issue, the indicated FRU has probably failed and should be replaced.

When the problem is resolved, an event with the same code will be logged with Resolved severity.

554.2

Warning

```
An Enclosure Management Processor (EMP) reported an alert condition on a voltage sensor. Type:
<detailed error information>. (enclosure: <enclosure number>, WWN: <World Wide Name>) voltage
sensor for <text>, sensor status: <text>, voltage: <voltage> V
```

A voltage sensor is not within the normal operating range but is within safe operating limits; or, a voltage sensor has been removed.

Recommended action:

- If a voltage sensor has exceeded the normal operating range but is within safe operating limits.
    - Check that all modules in the enclosure are fully seated in their slots and that their latches are locked.
    - If this does not resolve the issue, the indicated FRU has probably failed and should be replaced.
- If a voltage sensor has been removed:
    - Check that the indicated FRU is in the indicated enclosure.
        - If the FRU is not in the enclosure, install the FRU immediately.
        - If the FRU is in the enclosure, ensure that the FRU is fully seated in its slot and that its latches are locked.
    - If this does not resolve the issue, the indicated FRU has probably failed and should be replaced.

When the problem is resolved, an event with the same code will be logged with Resolved severity.

554.3

Resolved

```
An Enclosure Management Processor (EMP) reported an alert condition on a voltage sensor. Type:
<detailed error information>. (enclosure: <enclosure number>, WWN: <World Wide Name>) voltage
sensor for <text>, sensor status: <text>, voltage: <voltage> V
```

A SES alert for a voltage sensor in the indicated enclosure has been resolved.

Recommended action:

- No action is required.

554.4

Error

```
An Enclosure Management Processor (EMP) reported an alert condition on a voltage sensor. Type:
<detailed error information>. (enclosure: <enclosure number>, WWN: <World Wide Name>, drawer:
<drawer number>) voltage sensor for <text>, sensor status: <text>, voltage: <voltage> V
```

A voltage sensor reported an alert condition.

- A voltage sensor is outside a critical voltage threshold in the indicated FRU.
    - A voltage sensor is not able to communicate with the EMP.

Recommended action:

- If A voltage sensor is outside a critical voltage threshold in the indicated FRU.
    - Check that all modules in the enclosure are fully seated in their slots and that their latches, if any, are locked.
    - If this does not resolve the issue, the indicated FRU has probably failed and should be replaced.
- If the voltage sensor is not able to communicate with the EMP.
    - Wait for at least 10 minutes and check if the error resolves.
    - If the error persists, check that all modules in the enclosure are fully seated in their slots and that their latches, if any, are locked.
    - If this does not resolve the issue, note down the FRU. Ensure the partner FRU is not degraded. If the partner FRU is degraded, contact technical support.
    - For all FRU types except the enclosure, if the partner FRU is not degraded, remove and reinsert the indicated FRU.
    - If the indicated FRU is the enclosure, set up a preventive maintenance window and power cycle the enclosure at that time.
    - If this does not resolve the issue, the indicated FRU has probably failed and should be replaced.

When the problem is resolved, an event with the same code will be logged with Resolved severity.

554.5

Warning

`An Enclosure Management Processor (EMP) reported an alert condition on a voltage sensor. Type:` `<detailed error information>. (enclosure: <enclosure number>, WWN: <World Wide Name>, drawer:` `<drawer number>) voltage sensor for <text>, sensor status: <text>, voltage: <voltage> V`

A voltage sensor is not within the normal operating range but is within safe operating limits; or, a voltage sensor has been removed.

Recommended action:

- If a voltage sensor has exceeded the normal operating range but is within safe operating limits.
  - Check that all modules in the enclosure are fully seated in their slots and that their latches are locked.
  - If this does not resolve the issue, the indicated FRU has probably failed and should be replaced.
- If a voltage sensor has been removed:
  - Check that the indicated FRU is in the indicated enclosure.
    - If the FRU is not in the enclosure, install the FRU immediately.
    - If the FRU is in the enclosure, ensure that the FRU is fully seated in its slot and that its latches are locked.
  - If this does not resolve the issue, the indicated FRU has probably failed and should be replaced.

When the problem is resolved, an event with the same code will be logged with Resolved severity.

554.6

Resolved

`An Enclosure Management Processor (EMP) reported an alert condition on a voltage sensor. Type:` `<detailed error information>. (enclosure: <enclosure number>, WWN: <World Wide Name>, drawer:` `<drawer number>) voltage sensor for <text>, sensor status: <text>, voltage: <voltage> V`

A SES alert for a voltage sensor in the indicated enclosure has been resolved.

Recommended action:

- No action is required.

554.7

Error

```
An Enclosure Management Processor (EMP) reported an alert condition on a voltage sensor. Type:
<detailed error information>. (enclosure: <enclosure number>, WWN: <World Wide Name>) voltage
sensor for <text>, sensor status: <text>
```

A voltage sensor reported an alert condition.

- A voltage sensor is outside a critical voltage threshold in the indicated FRU.
  - A voltage sensor is not able to communicate with the EMP.

Recommended action:

- If A voltage sensor is outside a critical voltage threshold in the indicated FRU.
  - Check that all modules in the enclosure are fully seated in their slots and that their latches, if any, are locked.
  - If this does not resolve the issue, the indicated FRU has probably failed and should be replaced.
- If the voltage sensor is not able to communicate with the EMP.
  - Wait for at least 10 minutes and check if the error resolves.
  - If the error persists, check that all modules in the enclosure are fully seated in their slots and that their latches, if any, are locked.
  - If this does not resolve the issue, note down the FRU. Ensure the partner FRU is not degraded. If the partner FRU is degraded, contact technical support.
  - For all FRU types except the enclosure, if the partner FRU is not degraded, remove and reinsert the indicated FRU.
  - If the indicated FRU is the enclosure, set up a preventive maintenance window and power cycle the enclosure at that time.
  - If this does not resolve the issue, the indicated FRU has probably failed and should be replaced.

When the problem is resolved, an event with the same code will be logged with Resolved severity.

554.8

Warning

```
An Enclosure Management Processor (EMP) reported an alert condition on a voltage sensor. Type:
<detailed error information>. (enclosure: <enclosure number>, WWN: <World Wide Name>) voltage
sensor for <text>, sensor status: <text>
```

A voltage sensor is not within the normal operating range but is within safe operating limits; or, a voltage sensor has been removed.

Recommended action:

- If a voltage sensor has exceeded the normal operating range but is within safe operating limits.
  - Check that all modules in the enclosure are fully seated in their slots and that their latches are locked.
  - If this does not resolve the issue, the indicated FRU has probably failed and should be replaced.
- If a voltage sensor has been removed:
  - Check that the indicated FRU is in the indicated enclosure.
    - If the FRU is not in the enclosure, install the FRU immediately.
    - If the FRU is in the enclosure, ensure that the FRU is fully seated in its slot and that its latches are locked.
  - If this does not resolve the issue, the indicated FRU has probably failed and should be replaced.

When the problem is resolved, an event with the same code will be logged with Resolved severity.

554.9

Resolved

```
An Enclosure Management Processor (EMP) reported an alert condition on a voltage sensor. Type:
<detailed error information>. (enclosure: <enclosure number>, WWN: <World Wide Name>) voltage
sensor for <text>, sensor status: <text>
```

A SES alert for a voltage sensor in the indicated enclosure has been resolved.

Recommended action:

- No action is required.

554.10

Error

```
An Enclosure Management Processor (EMP) reported an alert condition on a voltage sensor. Type:
<detailed error information>. (enclosure: <enclosure number>, WWN: <World Wide Name>, drawer:
<drawer number>) voltage sensor for <text>, sensor status: <text>
```

A voltage sensor reported an alert condition.

- A voltage sensor is outside a critical voltage threshold in the indicated FRU.
  - A voltage sensor is not able to communicate with the EMP.

Recommended action:

- If A voltage sensor is outside a critical voltage threshold in the indicated FRU.
  - Check that all modules in the enclosure are fully seated in their slots and that their latches, if any, are locked.
  - If this does not resolve the issue, the indicated FRU has probably failed and should be replaced.
- If the voltage sensor is not able to communicate with the EMP.
  - Wait for at least 10 minutes and check if the error resolves.
  - If the error persists, check that all modules in the enclosure are fully seated in their slots and that their latches, if any, are locked.
  - If this does not resolve the issue, note down the FRU. Ensure the partner FRU is not degraded. If the partner FRU is degraded, contact technical support.
  - For all FRU types except the enclosure, if the partner FRU is not degraded, remove and reinsert the indicated FRU.
  - If the indicated FRU is the enclosure, set up a preventive maintenance window and power cycle the enclosure at that time.
  - If this does not resolve the issue, the indicated FRU has probably failed and should be replaced.

When the problem is resolved, an event with the same code will be logged with Resolved severity.

554.11

Warning

An Enclosure Management Processor (EMP) reported an alert condition on a voltage sensor. Type: `<detailed error information>`. (enclosure: `<enclosure number>`, WWN: `<World Wide Name>`, drawer: `<drawer number>`) voltage sensor for `<text>`, sensor status: `<text>`

A voltage sensor is not within the normal operating range but is within safe operating limits; or, a voltage sensor has been removed.

Recommended action:

- If a voltage sensor has exceeded the normal operating range but is within safe operating limits.
    - Check that all modules in the enclosure are fully seated in their slots and that their latches are locked.
    - If this does not resolve the issue, the indicated FRU has probably failed and should be replaced.
- If a voltage sensor has been removed:
    - Check that the indicated FRU is in the indicated enclosure.
        - If the FRU is not in the enclosure, install the FRU immediately.
        - If the FRU is in the enclosure, ensure that the FRU is fully seated in its slot and that its latches are locked.
    - If this does not resolve the issue, the indicated FRU has probably failed and should be replaced.

When the problem is resolved, an event with the same code will be logged with Resolved severity.

554.12

Resolved

An Enclosure Management Processor (EMP) reported an alert condition on a voltage sensor. Type: `<detailed error information>`. (enclosure: `<enclosure number>`, WWN: `<World Wide Name>`, drawer: `<drawer number>`) voltage sensor for `<text>`, sensor status: `<text>`

A SES alert for a voltage sensor in the indicated enclosure has been resolved.

Recommended action:

- No action is required.

555 - Expander status changed

555.1

Warning

```
An Enclosure Management Processor (EMP) reported an alert condition on an expander. Type:
<detailed error information>. (enclosure: <enclosure number>, WWN: <World Wide Name>) I/O
module <numeric value>, status: <text>
```

An expander in a controller module, expansion module, or drawer is mated but is not responding; or, an expander in an expansion module has been removed.

Recommended action:

- Check that the indicated FRU is in the indicated enclosure.

If the FRU is not in the enclosure, install the appropriate FRU immediately.

If the FRU is in the enclosure, ensure that the FRU is fully seated in its slot and that its latches, if any, are locked.

- If none of the above resolves the issue, the indicated FRU has failed and should be replaced.

When the problem is resolved, an event with the same code will be logged with Resolved severity.

555.2

Error

```
An Enclosure Management Processor (EMP) reported an alert condition on an expander. Type:
<detailed error information>. (enclosure: <enclosure number>, WWN: <World Wide Name>) I/O
module <numeric value>, status: <text>
```

The local Expander Controller firmware has detected a level of incompatibility with the partner Expander Controller firmware or hardware. As a preventive measure, the local Expander Controller may disable all the PHYs.

Recommended action:

- Check that both the Expander Controllers have the correct firmware revision.

If both Expander Controllers have different firmware versions, upgrade the partner controller module to the appropriate firmware that is compatible with the enclosure.

If this does not resolve the problem, replace the partner controller module.

When the problem is resolved, an event with the same code will be logged with Resolved severity.

555.3

Resolved

```
An Enclosure Management Processor (EMP) reported an alert condition on an expander. Type:
<detailed error information>. (enclosure: <enclosure number>, WWN: <World Wide Name>) I/O
module <numeric value>, status: <text>
```

A SES alert for an expander in the indicated enclosure has been resolved.

Recommended action:

- No action is required.

555.4

Warning

```
An Enclosure Management Processor (EMP) reported an alert condition on an expander. Type:
<detailed error information>. (enclosure: <enclosure number>, WWN: <World Wide Name>, drawer:
<drawer number>) drawer slice <numeric value>, status: <text>
```

An expander in a controller module, expansion module, or drawer is mated but is not responding; or, an expander in an expansion module has been removed.

Recommended action:

- Check that the indicated FRU is in the indicated enclosure.

If the FRU is not in the enclosure, install the appropriate FRU immediately.

If the FRU is in the enclosure, ensure that the FRU is fully seated in its slot and that its latches, if any, are locked.

- If none of the above resolves the issue, the indicated FRU has failed and should be replaced.

When the problem is resolved, an event with the same code will be logged with Resolved severity.

555.5

Error

```
An Enclosure Management Processor (EMP) reported an alert condition on an expander. Type:
<detailed error information>. (enclosure: <enclosure number>, WWN: <World Wide Name>, drawer:
<drawer number>) drawer slice <numeric value>, status: <text>
```

The local Expander Controller firmware has detected a level of incompatibility with the partner Expander Controller firmware or hardware. As a preventive measure, the local Expander Controller may disable all the PHYs.

Recommended action:

- Check that both the Expander Controllers have the correct firmware revision.

If both Expander Controllers have different firmware versions, upgrade the partner controller module to the appropriate firmware that is compatible with the enclosure.

If this does not resolve the problem, replace the partner controller module.

When the problem is resolved, an event with the same code will be logged with Resolved severity.

555.6

Resolved

```
An Enclosure Management Processor (EMP) reported an alert condition on an expander. Type:
<detailed error information>. (enclosure: <enclosure number>, WWN: <World Wide Name>, drawer:
<drawer number>) drawer slice <numeric value>, status: <text>
```

A SES alert for an expander in the indicated enclosure has been resolved.

Recommended action:

- No action is required.

556 - SAS expander status changed

556.1

Resolved

`A previous Warning or Error condition on a drawer expander has been resolved. (enclosure <enclosure number>, drawer: <drawer number>, path: <name>, expander: <numeric value> )`

A SES alert for an expander in the indicated enclosure has been resolved.

Recommended action:

- No action is required.

556.2

Resolved

`A previous Warning or Error condition on a root expander has been resolved. (enclosure <enclosure number>, path: <name> )`

A SES alert for an expander in the indicated enclosure has been resolved.

Recommended action:

- No action is required.

556.3

Error

`An alert condition was detected on a drawer expander element. (enclosure <enclosure number>, drawer: <drawer number>, path: <name>, expander: <numeric value>, errorCode: <error code>)`

None.

Recommended action:

- Replace the module that contains the indicated expander. This could be an IOM or a sideplane or drawer.

Contact technical support for replacement of the module containing the drawer expander.

- If this does not resolve the issue, contact technical support. The enclosure must be replaced.

When the problem is resolved, an event with the same code will be logged with Resolved severity.

556.4

Error

`An alert condition was detected on an root expander element. (enclosure <enclosure number>, path: <name>, errorCode: <error code>)`

None.

Recommended action:

- Replace the module that contains the indicated expander. This could be an IOM or a sideplane or drawer.

Contact technical support for replacement of the module containing the drawer expander.

- If this does not resolve the issue, contact technical support. The enclosure must be replaced.

When the problem is resolved, an event with the same code will be logged with Resolved severity.

556.5

Warning

A drawer expander element was uninstalled. (enclosure <enclosure number>, drawer: <drawer number>, path: <name>, expander: <numeric value>)

None.

Recommended action:

- If uninstalled, the expander associated with the sideplane or drawer will have to be installed. Contact technical support. Otherwise, replace the module that contains the indicated expander. This could be a sideplane or a drawer.

Contact technical support for replacement of the module containing the drawer expander.

- If this does not resolve the issue, contact technical support. The enclosure must be replaced.

When the problem is resolved, an event with the same code will be logged with Resolved severity.

556.6

Warning

A root expander element was uninstalled. (enclosure <enclosure number>, path: <name>)

None.

Recommended action:

- If uninstalled, the expander associated with the sideplane or drawer will have to be installed. Contact technical support. Otherwise, replace the module that contains the indicated expander. This could be a sideplane or a drawer.

Contact technical support for replacement of the module containing the drawer expander.

- If this does not resolve the issue, contact technical support. The enclosure must be replaced.

When the problem is resolved, an event with the same code will be logged with Resolved severity.

556.7

Warning

A drawer expander experienced a communication fault. (enclosure <enclosure number>, drawer: <drawer number>, path: <name>, expander: <numeric value>, errorCode: <error code>)

None.

Recommended action:

- If uninstalled, the expander associated with the sideplane or drawer will have to be installed. Contact technical support. Otherwise, replace the module that contains the indicated expander. This could be a sideplane or a drawer.

Contact technical support for replacement of the module containing the drawer expander.

- If this does not resolve the issue, contact technical support. The enclosure must be replaced.

When the problem is resolved, an event with the same code will be logged with Resolved severity.

556.8

Warning

```
A root expander experienced a communication fault. (enclosure <enclosure number>, path:
<name>, errorCode: <error code> )
```

None.

Recommended action:

- If uninstalled, the expander associated with the sideplane or drawer will have to be installed. Contact technical support. Otherwise, replace the module that contains the indicated expander. This could be a sideplane or a drawer.

Contact technical support for replacement of the module containing the drawer expander.

- If this does not resolve the issue, contact technical support. The enclosure must be replaced.

When the problem is resolved, an event with the same code will be logged with Resolved severity.

557 - Current sensor status changed

557.1

Error

```
An Enclosure Management Processor (EMP) reported an alert condition on a current sensor. Type:
<detailed error information>. (enclosure: <enclosure number>, WWN: <World Wide Name>) current
sensor for <text>, sensor status: <text>, current: <numeric value> A
```

- The EMP is unable to communicate with the indicated current sensor.
- The current sensor is outside critical threshold values.

Recommended action:

- If the EMP is unable to communicate with the indicated current sensor.
  - Wait for at least 10 minutes and check if the error resolves.
  - If the error persists, check that all modules in the enclosure are fully seated in their slots and that their latches, if any, are locked.
  - If this does not resolve the issue, note down the FRU. Ensure the partner FRU is not degraded. If the partner FRU is degraded, contact technical support.
  - For all FRU types except the enclosure, if the partner FRU is not degraded, remove and reinsert the indicated FRU.
  - If the indicated FRU is the enclosure, set up a preventive maintenance window and power cycle the enclosure at that time.
  - If this does not resolve the issue, the indicated FRU has probably failed and should be replaced.
- If the current sensor is outside critical threshold values.
  - Check that all modules in the enclosure are fully seated in their slots and that their latches, if any, are locked.
  - If this does not resolve the issue, the indicated FRU has probably failed and should be replaced.

When the problem is resolved, an event with the same code will be logged with Resolved severity.

557.2

Warning

```
An Enclosure Management Processor (EMP) reported an alert condition on a current sensor. Type:
<detailed error information>. (enclosure: <enclosure number>, WWN: <World Wide Name>) current
sensor for <text>, sensor status: <text>, current: <numeric value> A
```

- A current sensor is outside the defined warning threshold values.
- A current sensor has been uninstalled.

Recommended action:

- If a current sensor has exceeded the defined warning threshold values.
    - Check that all modules in the enclosure are fully seated in their slots and that their latches, if any are locked.
    - If this does not resolve the issue, the indicated FRU has probably failed and should be replaced.
- If a current sensor has been uninstalled.
    - Check that the indicated FRU is in the indicated enclosure.
    - If the FRU is not in the enclosure, install the FRU immediately.
    - If the FRU is in the enclosure, ensure that the FRU is fully seated in its slot and that its latches, if any, are locked.
    - If this does not resolve the issue, the indicated FRU has probably failed and should be replace.

When the problem is resolved, an event with the same code will be logged with Resolved severity.

557.3

Error

```
An Enclosure Management Processor (EMP) reported an alert condition on a current sensor. Type:
<detailed error information>. (enclosure: <enclosure number>, WWN: <World Wide Name>) current
sensor for <text>, sensor status: <text>, current: <numeric value> A
```

A SES alert for a current sensor in the indicated enclosure has been resolved.

Recommended action:

- No action is required.

557.4

Error

An Enclosure Management Processor (EMP) reported an alert condition on a current sensor. Type: <detailed error information>. (enclosure: <enclosure number>, WWN: <World Wide Name>, drawer: <drawer number>) current sensor for <text>, sensor status: <text>, current: <numeric value> A

- The EMP is unable to communicate with the indicated current sensor.
- The current sensor is outside critical threshold values.

Recommended action:

- If the EMP is unable to communicate with the indicated current sensor.
  - Wait for at least 10 minutes and check if the error resolves.
  - If the error persists, check that all modules in the enclosure are fully seated in their slots and that their latches, if any, are locked.
  - If this does not resolve the issue, note down the FRU. Ensure the partner FRU is not degraded. If the partner FRU is degraded, contact technical support.
  - For all FRU types except the enclosure, if the partner FRU is not degraded, remove and reinsert the indicated FRU.
  - If the indicated FRU is the enclosure, set up a preventive maintenance window and power cycle the enclosure at that time.
  - If this does not resolve the issue, the indicated FRU has probably failed and should be replaced.
- If the current sensor is outside critical threshold values.
  - Check that all modules in the enclosure are fully seated in their slots and that their latches, if any, are locked.
  - If this does not resolve the issue, the indicated FRU has probably failed and should be replaced.

When the problem is resolved, an event with the same code will be logged with Resolved severity.

557.5

Warning

```
An Enclosure Management Processor (EMP) reported an alert condition on a current sensor. Type:
<detailed error information>. (enclosure: <enclosure number>, WWN: <World Wide Name>, drawer:
<drawer number>) current sensor for <text>, sensor status: <text>, current: <numeric value> A
```

- A current sensor is outside the defined warning threshold values.
- A current sensor has been uninstalled.

Recommended action:

- If a current sensor has exceeded the defined warning threshold values.
  - Check that all modules in the enclosure are fully seated in their slots and that their latches, if any are locked.
  - If this does not resolve the issue, the indicated FRU has probably failed and should be replaced.
- If a current sensor has been uninstalled.
  - Check that the indicated FRU is in the indicated enclosure.
  - If the FRU is not in the enclosure, install the FRU immediately.
  - If the FRU is in the enclosure, ensure that the FRU is fully seated in its slot and that its latches, if any, are locked.
  - If this does not resolve the issue, the indicated FRU has probably failed and should be replace.

When the problem is resolved, an event with the same code will be logged with Resolved severity.

557.6

Error

```
An Enclosure Management Processor (EMP) reported an alert condition on a current sensor. Type:
<detailed error information>. (enclosure: <enclosure number>, WWN: <World Wide Name>, drawer:
<drawer number>) current sensor for <text>, sensor status: <text>, current: <numeric value> A
```

A SES alert for a current sensor in the indicated enclosure has been resolved.

Recommended action:

- No action is required.

557.7

Error

```
An Enclosure Management Processor (EMP) reported an alert condition on a current sensor. Type:
<detailed error information>. (enclosure: <enclosure number>, WWN: <World Wide Name>) current
sensor for <text>, sensor status: <text>
```

- The EMP is unable to communicate with the indicated current sensor.
- The current sensor is outside critical threshold values.

Recommended action:

- If the EMP is unable to communicate with the indicated current sensor.
  - Wait for at least 10 minutes and check if the error resolves.
  - If the error persists, check that all modules in the enclosure are fully seated in their slots and that their latches, if any, are locked.
  - If this does not resolve the issue, note down the FRU. Ensure the partner FRU is not degraded. If the partner FRU is degraded, contact technical support.
  - For all FRU types except the enclosure, if the partner FRU is not degraded, remove and reinsert the indicated FRU.
  - If the indicated FRU is the enclosure, set up a preventive maintenance window and power cycle the enclosure at that time.
  - If this does not resolve the issue, the indicated FRU has probably failed and should be replaced.
- If the current sensor is outside critical threshold values.
  - Check that all modules in the enclosure are fully seated in their slots and that their latches, if any, are locked.
  - If this does not resolve the issue, the indicated FRU has probably failed and should be replaced.

When the problem is resolved, an event with the same code will be logged with Resolved severity.

557.8

Warning

`An Enclosure Management Processor (EMP) reported an alert condition on a current sensor. Type:`
`<detailed error information>. (enclosure: <enclosure number>, WWN: <World Wide Name>) current`
`sensor for <text>, sensor status: <text>`

- A current sensor is outside the defined warning threshold values.
- A current sensor has been uninstalled.

Recommended action:

- If a current sensor has exceeded the defined warning threshold values.
  - Check that all modules in the enclosure are fully seated in their slots and that their latches, if any are locked.
  - If this does not resolve the issue, the indicated FRU has probably failed and should be replaced.
- If a current sensor has been uninstalled.
  - Check that the indicated FRU is in the indicated enclosure.
  - If the FRU is not in the enclosure, install the FRU immediately.
  - If the FRU is in the enclosure, ensure that the FRU is fully seated in its slot and that its latches, if any, are locked.
  - If this does not resolve the issue, the indicated FRU has probably failed and should be replace.

When the problem is resolved, an event with the same code will be logged with Resolved severity.

557.9

Error

`An Enclosure Management Processor (EMP) reported an alert condition on a current sensor. Type:`
`<detailed error information>. (enclosure: <enclosure number>, WWN: <World Wide Name>) current`
`sensor for <text>, sensor status: <text>`

A SES alert for a current sensor in the indicated enclosure has been resolved.

Recommended action:

- No action is required.

557.10

Error

An Enclosure Management Processor (EMP) reported an alert condition on a current sensor. Type: <detailed error information>. (enclosure: <enclosure number>, WWN: <World Wide Name>, drawer: <drawer number>) current sensor for <text>, sensor status: <text>

- The EMP is unable to communicate with the indicated current sensor.
- The current sensor is outside critical threshold values.

Recommended action:

- If the EMP is unable to communicate with the indicated current sensor.
  - Wait for at least 10 minutes and check if the error resolves.
  - If the error persists, check that all modules in the enclosure are fully seated in their slots and that their latches, if any, are locked.
  - If this does not resolve the issue, note down the FRU. Ensure the partner FRU is not degraded. If the partner FRU is degraded, contact technical support.
  - For all FRU types except the enclosure, if the partner FRU is not degraded, remove and reinsert the indicated FRU.
  - If the indicated FRU is the enclosure, set up a preventive maintenance window and power cycle the enclosure at that time.
  - If this does not resolve the issue, the indicated FRU has probably failed and should be replaced.
- If the current sensor is outside critical threshold values.
  - Check that all modules in the enclosure are fully seated in their slots and that their latches, if any, are locked.
  - If this does not resolve the issue, the indicated FRU has probably failed and should be replaced.

When the problem is resolved, an event with the same code will be logged with Resolved severity.

557.11

Warning

`An Enclosure Management Processor (EMP) reported an alert condition on a current sensor. Type: <detailed error information>. (enclosure: <enclosure number>, WWN: <World Wide Name>, drawer: <drawer number>) current sensor for <text>, sensor status: <text>`

- A current sensor is outside the defined warning threshold values.
- A current sensor has been uninstalled.

Recommended action:

- If a current sensor has exceeded the defined warning threshold values.
  - Check that all modules in the enclosure are fully seated in their slots and that their latches, if any are locked.
  - If this does not resolve the issue, the indicated FRU has probably failed and should be replaced.
- If a current sensor has been uninstalled.
  - Check that the indicated FRU is in the indicated enclosure.
  - If the FRU is not in the enclosure, install the FRU immediately.
  - If the FRU is in the enclosure, ensure that the FRU is fully seated in its slot and that its latches, if any, are locked.
  - If this does not resolve the issue, the indicated FRU has probably failed and should be replace.

When the problem is resolved, an event with the same code will be logged with Resolved severity.

557.12

Error

`An Enclosure Management Processor (EMP) reported an alert condition on a current sensor. Type: <detailed error information>. (enclosure: <enclosure number>, WWN: <World Wide Name>, drawer: <drawer number>) current sensor for <text>, sensor status: <text>`

A SES alert for a current sensor in the indicated enclosure has been resolved.

Recommended action:

- No action is required.

563 - A drive power cycle request received

563.1

Info

`A disk has been restarted. (enclosure: <enclosure number>, slot: <slot number>)`

None.

Recommended action:

- No action is required.

565 - PCIe bus degraded

565.1

Warning

`At least one of the internal PCIe buses is degraded. The hardware bus is unable to use optimal speeds.`

This event is the result of a hardware problem that has caused the controller to run slower than expected. The system works, but I/O performance is degraded.

Recommended action:

- Restart the controller that logged the event. If the problem persists, replace the controller module.

565.2

Resolved

`PCIe buses are all now operating at optimal speed.`

This event is the result of resolving a previously reported hardware problem that has caused the controller to run slower than expected.

Recommended action:

- No action is required.

566 - Internal DDR port busy

566.1

Info

`One of the internal DDR ports has been busy for at least 5 minutes. (port: <numeric value>, read activity count: <count>, busy status count: <count>, maximum busy percentage: <numeric value>%)`

This event is the result of a speed compensation while handling short data blocks. The system is operational but I/O performance is degraded.

Recommended action:

- No action is required.

568 - Mixed sector format disks in disk group

568.1

Info

`A disk group now contains mixed sector format disks. (SN: <serial number>, disk group: <name>)`

This event is the result of the user selecting disks with sector formats that do not match or a global spare replacement with a different sector format than the disk group. This could result in degraded performance for some workloads.

Recommended action:

- No action is required.

569 - A SAS host cable change detected

569.1

Warning

`A SAS host cable mismatch has been detected for port <name>. The indicated alternate PHYs <name> have been disabled.`

For example, a fan-out cable is connected to a controller module host port but the port is configured to use standard SAS cables, or vice versa.

Recommended action:

- To use the connected cable, use the CLI 'set host-parameters' command to configure ports to use the proper cable type.
- Otherwise, replace the cable with the type of cable that the port is configured to use.

When the problem is resolved, an event with the same code will be logged with Resolved severity.

569.2

Resolved

`A previously detected SAS host cable mismatch has been resolved for port <numeric value>.`

The proper cable type has been connected.

Recommended action:

- No action is required.

590 - A disk group has been quarantined

590.1

Error

`A disk group has been quarantined because of a flush restore failure. (SN: <serial number>, disk group: <name>)`

This condition resulted from a controller flush/restore failure.

Recommended action:

- To restore the disk group, use the CLI 'dequarantine' command to dequarantine the disk group. If more than one disk group is quarantined you must individually dequarantine each disk group, whether it is fault tolerant or not. When dequarantine is complete, the disk group will return to the state it was in before being quarantined. For example, if the disk group was reconstructing before being quarantined, the disk group will resume reconstructing where it stopped.
- For a linear disk group, if you want to find where parity is incorrect, use the CLI 'scrub vdisk' command with the 'fix' parameter disabled. This step is optional and not required to fix data integrity issues.
- For a fault tolerant disk group, run either 'scrub disk-groups' for a virtual disk group or 'scrub vdisk' with the 'fix' parameter enabled for a linear disk group. This step will make the parity consistent with the existing user data, and is required to fix data integrity issues.
- For a reconstructing disk group, let reconstruction finish, then run either 'scrub disk-groups' for a virtual disk group or 'scrub vdisk' with the 'fix' parameter enabled for a linear disk group. This step will make the parity consistent with the existing user data, and is required to fix data integrity issues.
- Restore the data to the disk group from a backup copy.

590.2

Error

`A disk group has been quarantined because of a flush restore failure. (SN: <serial number>, disk group: <name>)`

This condition resulted from a controller flush/restore failure.

Recommended action:

- To restore the disk group, use the CLI 'dequarantine' command to dequarantine the disk group. If more than one disk group is quarantined you must individually dequarantine each disk group, whether it is fault tolerant or not. When dequarantine is complete, the disk group will return to the state it was in before being quarantined. For example, if the disk group was reconstructing before being quarantined, the disk group will resume reconstructing where it stopped.
- For a fault tolerant disk group, run 'scrub disk-groups' for a virtual disk group. This step will make the parity consistent with the existing user data, and is required to fix data integrity issues.
- For a reconstructing disk group, let reconstruction finish, then run 'scrub disk-groups' for a virtual disk group. This step will make the parity consistent with the existing user data, and is required to fix data integrity issues.
- Restore the data to the disk group from a backup copy.

593 - PCIe bus speed changed

593.1

Warning

`A PCIe bus has transitioned to a different speed. (PCIe link: <name>, old speed: Gen <numeric value>, new speed: Gen <numeric value>)`

None.

Recommended action:

- No action is required.

594 - Drive is missing

594.1

Info

```
A disk that was part of a disk group is missing and the disk group is quarantined. (disk group:
<name>, SN: <serial number>) (disk: channel: <channel index>, ID: <device identifier>, SN:
<serial number>, enclosure: <enclosure number>, slot: <slot number>)
```

The indicated disk in the indicated disk group is missing and the disk group is quarantined. While the disk group is quarantined, in linear storage any attempt to access its volumes from a host will fail. In virtual storage, all volumes in the pool will be forced read-only. If all of the disks become accessible, the disk group will be dequarantined automatically with a resulting status of FTOL. If not all of the disks become accessible but enough become accessible to allow reading from and writing to the disk group, it will be dequarantined automatically with a resulting status of FTDN or CRIT. If a spare disk is available, reconstruction will begin automatically. When the disk group has been removed from quarantine, event 173 is logged. For a more detailed discussion of dequarantine, see the WBI or CLI documentation.

Caution: Avoid using the manual dequarantine operation as a recovery method when event 172 is logged because this causes data recovery to be more difficult or impossible.

Caution: If you clear unwritten cache data while a disk group is quarantined or offline, that data will be permanently lost.

Recommended action:

- If event 173 has subsequently been logged for the indicated disk group, no action is required. The disk group has already been removed from quarantine.
- Otherwise, perform the following actions:
  - Check that all enclosures are powered on.
  - Check that all disks and I/O modules in every enclosure are fully seated in their slots and that their latches are locked.
  - Reseat any disks in the quarantined disk group that are reported as missing or failed in the user interface. (Do NOT remove and reinsert disks that are not members of the disk group that is quarantined.)
  - Check that the SAS expansion cables are connected between each enclosure in the storage system and that they are fully seated. (Do NOT remove and reinsert the cables because this can cause problems with additional disk groups.)
  - Check that no disks have been removed from the system unintentionally.
  - Check for other events that indicate faults in the system and follow the recommended actions for those events. But, if the event indicates a failed disk and the recommended action is to replace the disk, do NOT replace the disk at this time because it may be needed later for data recovery.
  - If the disk group is still quarantined after performing the above steps, shut down both controllers and then power down the entire storage system. Power it back up, beginning with any disk enclosures (expansion enclosures), then the controller enclosure.
  - If the disk group is still quarantined after performing the above steps, contact technical support.

594.2

Info

```
A disk that was part of a disk group is missing and the disk group is quarantined. (disk group:
<name>, SN: <serial number>) (disk: channel: <channel index>, ID: <device identifier>, SN:
<serial number>, enclosure: <enclosure number>, slot: <slot number>)
```

The indicated disk in the indicated disk group is missing and the disk group is quarantined. While the disk group is quarantined, in virtual storage, all volumes in the pool will be forced read-only. If all of the disks become accessible, the disk group will be dequarantined automatically with a resulting status of FTOL. If not all of the disks become accessible but enough become accessible to allow reading from and writing to the disk group, it will be dequarantined automatically with a resulting status of FTDN or CRIT. If a spare disk is available, reconstruction will begin automatically. When the disk group has been removed from quarantine, event 173 is logged. For a more detailed discussion of dequarantine, see the WBI or CLI documentation.

Caution: Avoid using the manual dequarantine operation as a recovery method when event 172 is logged because this causes data recovery to be more difficult or impossible.

Caution: If you clear unwritten cache data while a disk group is quarantined or offline, that data will be permanently lost.

Recommended action:

- If event 173 has subsequently been logged for the indicated disk group, no action is required. The disk group has already been removed from quarantine.
- Otherwise, perform the following actions:
  - Check that all enclosures are powered on.
  - Check that all disks and I/O modules in every enclosure are fully seated in their slots and that their latches are locked.
  - Reseat any disks in the quarantined disk group that are reported as missing or failed in the user interface. (Do NOT remove and reinsert disks that are not members of the disk group that is quarantined.)
  - Check that the SAS expansion cables are connected between each enclosure in the storage system and that they are fully seated. (Do NOT remove and reinsert the cables because this can cause problems with additional disk groups.)
  - Check that no disks have been removed from the system unintentionally.
  - Check for other events that indicate faults in the system and follow the recommended actions for those events. But, if the event indicates a failed disk and the recommended action is to replace the disk, do NOT replace the disk at this time because it may be needed later for data recovery.
  - If the disk group is still quarantined after performing the above steps, shut down both controllers and then power down the entire storage system. Power it back up, beginning with any disk enclosures (expansion enclosures), then the controller enclosure.
  - If the disk group is still quarantined after performing the above steps, contact technical support.

595 - Logged controller serial numbers

595.1

Info

Controller serial numbers have been logged. (controller A: <serial number>, controller B: <serial number>)

None.

Recommended action:

- No action is required.

596 - Enclosure fault protection broken

596.1

Warning

Enclosure fault protection has been compromised for the indicated disk group. (disk group: <name>, SN: <serial number>) (disk: channel: <channel index>, ID: <device identifier>, SN: <serial number>, enclosure: <enclosure number>, slot: <slot number>)

To replace the failed disk, the system was unable to find a spare that met requirements to minimize the risk of data loss in the event of enclosure failure, so the system had to select a spare that did not meet the requirements. For a RAID-6 disk group, this means that more than two member disks are in the same enclosure. For other RAID levels, this means that more than one member disk is in the same enclosure.

Recommended action:

- Replace the indicated failed disk in the indicated enclosure to restore enclosure fault protection.

597 - Drawer fault protection broken

597.1

Warning

Drawer fault protection has been compromised for the indicated disk group. (disk group: <name>, SN: <serial number>) (disk: channel: <channel index>, ID: <device identifier>, SN: <serial number>, enclosure: <enclosure number>, slot: <slot number>)

To replace the failed disk, the system was unable to find a spare that met requirements to minimize the risk of data loss in the event of drawer failure, so the system had to select a spare that did not meet the requirements. For a RAID-6 disk group, this means that more than two member disks are in the same drawer. For other RAID levels, this means that more than one member disk is in the same drawer.

Recommended action:

- Replace the indicated failed disk in the indicated enclosure to restore drawer fault protection.

598 - Slow disk detected

598.1

Info

The system determined that the indicated disk is slow because it has failed a performance measurement based on the configured threshold. (drive id: <drive index>, drive SN: <serial number>, passive magnitude: <numeric value>, active magnitude <numeric value>, drive status: <text>)

None.

Recommended action:

- Monitor the disk.

599 - Enclosure power element alert

599.1

Info

The firmware has yet to retrieve Enclosure Power control status (enclosure: <enclosure number>, WWN: <World Wide Name>). The other <text> is not installed.

The Enclosure Power element provides enclosure level power control.

Recommended action:

- No action is required.

599.2

Info

The firmware has yet to retrieve Enclosure Power control status (enclosure: <enclosure number>, WWN: <World Wide Name>, errorCode: <error code>).

The Enclosure Power element provides enclosure level power control.

Recommended action:

- Contact technical support.

When the problem is resolved, an event with the same code will be logged with Resolved severity.

599.3

Info

A previous Warning or Error condition for the Enclosure Power element has been resolved (enclosure: <enclosure number>, WWN: <World Wide Name>).

The Enclosure Power element provides enclosure level power control.

Recommended action:

- No action is required.

599.4

Info

An alert has been detected for the Enclosure Power element (enclosure: <enclosure number>, WWN: <World Wide Name>, errorCode: <error code>).

None.

Recommended action:

- No action is required.

602 - Midplane Interconnect element alert

602.1

Warning

An alert condition was detected on a Midplane Interconnect element (enclosure: <enclosure number>, WWN: <World Wide Name>, errorCode: <error code>).

The Midplane Interconnect element reports status associated with the interface between the SBB I/O module and the midplane. This is typically some form of communication problem on the midplane interconnect.

Recommended action:

- Contact technical support. Provide logs to technical support personnel for analysis.

When the problem is resolved, an event with the same code will be logged with Resolved severity.

602.2

Resolved

A previous Warning or Error condition for the Midplane Interconnect element has been resolved (enclosure: <enclosure number>, WWN: <World Wide Name>).

The Midplane Interconnect element reports status associated with the interface between the SBB I/O module and the midplane.

Recommended action:

- No action is required.

603 - SAS Connector element alert

603.1

Warning

An alert condition for a SAS Connector element has been detected (enclosure: <enclosure number>, WWN: <World Wide Name>, errorCode: <error code>).

The SAS Connector element report status information for both external and internal SAS port connectors.

Recommended action:

- Contact technical support.

When the problem is resolved, an event with the same code will be logged with Resolved severity.

603.2

Info

```
An alert condition for a SAS Connector element has been detected (enclosure: <enclosure
number>, WWN: <World Wide Name>, errorCode: <error code>).
```

The SAS Connector element report status information for both external and internal SAS port connectors.

Recommended action:

- No action is required.

605 - Inactive processing core

605.1

Warning

```
One or more controller processing cores is not active.
```

The controller module has multiple processing cores. The system has enough active cores to operate but performance is degraded.

Recommended action:

- Attempt to restart all the processing cores as follows:
  - Shut down the controller module that logged this event.
  - Remove the controller module, wait 30 seconds, and then reinsert the controller module.
- If this event is logged again, contact technical support.

606 - Supercapacitor charging failure

606.1

Error

```
A controller contains unwritten cache data for a volume, and its supercapacitor has failed to
charge. (controller: <name>)
```

Due to the supercapacitor failure, if the controller loses power, it will not have backup power to flush the unwritten data from cache to memory card.

Recommended action:

- Verify that the cache-write policy is write-through for all volumes.
- Contact technical support for information about replacing the controller module.

607 - Power cycle other controller

607.1

Warning

```
The local controller is rebooting the other controller in an Active-Active configuration.
```

None.

Recommended action:

- No action is required.

608 - Backend cable miscabled

608.1

Error

A back-end cable has been miscabled where both controllers are connected. Undefined error type. (error type: <description>)

None.

Recommended action:

- One of the cables is incorrectly connected to a controller egress port forming a loop in the SAS topology.

Check back-end cabling from each controller egress port to determine the incorrect connection.

608.2

Error

A back-end cable has been miscabled, causing controller egress ports to be connected to each other.

None.

Recommended action:

- Check back-end cabling and make sure that SAS cables are connected to the correct ports for the port specified. One of the cables is incorrectly connected to a controller egress port forming a loop in the SAS topology.

608.4

Error

A back-end cable has been miscabled. A cable is connected to the middle port but that port is not supported.

None.

Recommended action:

- Check back-end cabling and make sure that SAS cables are connected to the correct ports for the port specified. Move the cable from the middle port of the IOM to the left or right port, as appropriate.

609 - Drawer open

609.1

Resolved

A previous Informational or Error condition for the door lock element has been resolved. (enclosure <enclosure number>, drawer: <drawer number>)

The door lock element reports status associated with the enclosure drawer.

Recommended action:

- No action is required.

609.2

Info

```
An alert condition was detected on a door lock element. (enclosure <enclosure number>, drawer:
<drawer number>, errorCode: <error code>)
```

The door lock element reports status associated with the enclosure drawer. The drawer sensor is reporting uninstalled.

Recommended action:

* No action is required.

609.3

Error

```
An alert condition was detected on a door lock element. (enclosure <enclosure number>, drawer:
<drawer number>, errorCode: <error code>)
```

The door lock element reports status associated with the enclosure drawer. The drawer has been reporting as open for a long period of time. This may reduce cooling, potentially causing the enclosure to overheat.

Recommended action:

* Check that the drawer is fully closed and latched.

When the problem is resolved, an event with the same code will be logged with Resolved severity.

610 - Sideplane element alert

610.1

Resolved

```
A previous Warning or Error condition for the sideplane element has been resolved. (enclosure
<enclosure number>, sideplane: <numeric value>)
```

None.

Recommended action:

* No action is required.

610.2

Error

```
An alert condition was detected on a sideplane element. (enclosure <enclosure number>,
sideplane: <numeric value>, errorCode: <error code>, sideplane additional status: <numeric
value>)
```

None.

Recommended action:

* Check the drawer that the indicated sideplane is in fully closed and latched.
* If this does not resolve the issue, contact technical support. The enclosure must be replaced.

610.3

Warning

```
A sideplane element was uninstalled. (enclosure <enclosure number>, sideplane: <numeric
value>, errorCode: <error code>)
```

None.

Recommended action:

- The sideplane associated with the drawer must be installed. Contact technical support.

611 - Email Notification Event

611.1

Info

```
Email notification sent successfully.
```

None.

Recommended action:

- Please verify the configured parameters and ask the recipients to confirm that they received the message.

611.2

Error

```
Email notification sent successfully.
```

None.

Recommended action:

- Please verify the configured parameters and ask the recipients to confirm that they received the message.

611.3

Info

```
Email notification failed. This could be due to an unreachable SMTP server or a difference
between the sender and SMTP server domains. Please contact your IT administrator to verify SMTP
server and domain details.
```

None.

Recommended action:

- Please verify the configured parameters and ask the recipients to confirm that they received the message.

611.4

Error

```
Email notification failed. This could be due to an unreachable SMTP server or a difference
between the sender and SMTP server domains. Please contact your IT administrator to verify SMTP
server and domain details.
```

None.

Recommended action:

- Please verify the configured parameters and ask the recipients to confirm that they received the message.

611.5

Info

Email notification failed due to improper configuration. Please verify the sender, sender-password, domain parameters, and server settings.

None.

Recommended action:

- Please verify the configured parameters and ask the recipients to confirm that they received the message.

611.6

Error

Email notification failed due to improper configuration. Please verify the sender, sender-password, domain parameters, and server settings.

None.

Recommended action:

- Please verify the configured parameters and ask the recipients to confirm that they received the message.

612 - Connector element alert

612.1

Info

An alert condition was detected on an internal chassis SAS connector. (enclosure <enclosure number>, element index: <numeric value>)

The event message specifies the location of the internal SAS connector in the chassis.

Recommended action:

- No action is required.

613 - IOM element alert

613.1

Resolved

A previous Warning or Error condition for the IOM has been resolved. (enclosure <enclosure number>, IOM: <name>)

None.

Recommended action:

- No action is required.

613.2

Warning

`An alert condition was detected on an IOM. (enclosure <enclosure number>, IOM: <name>, errorCode: <error code>)`

None.

Recommended action:

- If uninstalled, install the indicated IOM or disk expander otherwise attempt to reseat it.
- If this does not resolve the issue, replace the IOM or disk expander.

613.3

Warning

`An IOM was uninstalled. (enclosure <enclosure number>, IOM: <name>)`

None.

Recommended action:

- If uninstalled, install the indicated IOM or disk expander otherwise attempt to reseat it.
- If this does not resolve the issue, replace the IOM or disk expander.

613.4

Resolved

`A previous Warning or Error condition for the disk expander has been resolved. (enclosure <enclosure number>, disk expander: <name>)`

None.

Recommended action:

- No action is required.

613.5

Warning

`An alert condition was detected on a disk expander. (enclosure <enclosure number>, disk expander: <name>, errorCode: <error code>)`

None.

Recommended action:

- If uninstalled, install the indicated IOM or disk expander otherwise attempt to reseat it.
- If this does not resolve the issue, replace the IOM or disk expander.

613.6

Warning

`A disk expander was uninstalled. (enclosure <enclosure number>, disk expander: <name>)`

None.

Recommended action:

- If uninstalled, install the indicated IOM or disk expander otherwise attempt to reseat it.
- If this does not resolve the issue, replace the IOM or disk expander.

613.7

Error

An alert condition was detected on an IOM. (enclosure <enclosure number>, IOM: <name>, errorCode: <error code>)

None.

Recommended action:

- Either install the indicated IOM or disk expander or attempt to reseat it.
- If this does not resolve the issue, replace the IOM or disk expander.

613.8

Error

An alert condition was detected on a disk expander. (enclosure <enclosure number>, disk expander: <name>, errorCode: <error code>)

None.

Recommended action:

- Either install the indicated IOM or disk expander or attempt to reseat it.
- If this does not resolve the issue, replace the IOM or disk expander.

614 - Degraded drive clear

614.1

Info

Cleared the degraded state of the indicated disk. (disk ID: <drive index>)

Recommended action:

- No action is required.

615 - Rebalance array start

615.1

Info

An ADAPT disk group has started a rebalance operation because spare capacity is unevenly distributed across disks in the disk group. (name: <name>, SN: <serial number>)

None.

Recommended action:

- No action is required.

615.2

Info

An ADAPT disk group has started a rebalance operation because the disk group has been expanded. (name: <name>, SN: <serial number>).

None.

Recommended action:

- No action is required.

616 - Rebalance array complete

616.1

Info

An ADAPT ...disk group has successfully completed a rebalance operation. (name: <name>, SN: <serial number>).

None.

Recommended action:

- No action is required.

616.2

Warning

An ADAPT ...disk group did not complete a rebalance operation because of a disk failure. (name: <name>, SN: <serial number>).

None.

Recommended action:

- No action is required.

617 - Spare capacity goal is not met

617.1

Warning

The spare capacity available in the ADAPT ...disk group is not sufficient to meet the configured spare capacity (disk group: <name>, SN: <serial number>) (target spare capacity(GiB): <numeric value>, actual spare capacity(GiB): <count>).

This event indicates that the available space in the system is insufficient to provide the level of full fault tolerance that is specified by the target spare capacity. Spare capacity availability can be influenced by operations that require available space in the system, such as reconstructing data from a failed disk.

Recommended action:

- Add disks to the disk group, or replace any disks that may have failed. The system will automatically increase the spare capacity to meet the requirements placed on the system by the target spare capacity.

618 - Spare capacity goal is met

618.1

Resolved

The spare capacity available in the ADAPT ...disk group meets the configured spare capacity. (disk group: <name>, SN: <serial number>) (target spare capacity(GiB): <numeric value>, actual spare capacity(GiB): <count>).

None.

Recommended action:

- No action is required.

619 - BR link error fault injection

619.1

Info

The controller has been injected with a fault to introduce a BR link error.

None.

Recommended action:

- No action is required.

620 - Expander zoning error

620.1

Error

A connected expander has zoning enabled, which may limit disk access. (enclosure: <enclosure number>, WWN: <World Wide Name>)

Disk access will change depending on the port used to connect to the expander.

Recommended action:

- Load a valid firmware bundle to disable zoning.

620.2

Resolved

A connected expander has zoning enabled, which may limit disk access. (enclosure: <enclosure number>, WWN: <World Wide Name>)

Expander zoning has been disabled for the indicated enclosure.

Recommended action:

- No action is required.

621 - Degraded ADAPT rebalance started

621.1

Info

An ADAPT ...disk group has started a REFT (rebalance fault tolerant) operation because the disk group has both fault tolerant and critical stripe zones. (disk group: <name>, SN: <serial number>)

None.

Recommended action:

- No action is required.

622 - Degraded ADAPT rebalance completed

622.1

Info

An ADAPT ...disk group has successfully completed a REFT (rebalance fault tolerant) operation. (disk group: <name>, SN: <serial number>)

None.

Recommended action:

- No action is required.

623 - Management controller parameters set

623.1

Info

Management Controller configuration parameters were set.

One or more configuration parameters associated with the Management Controller (MC) have been changed, such as configuration for SNMP, email notification, and system strings (system name, system location, etc.).

Recommended action:

- No action is required.

626 - Unsupported TPID

626.1

Info

Detected an unsupported enclosure (midplane Type ID) (enclosure <enclosure number>, unsupported TPID <numeric value>).

None.

Recommended action:

- Replace the unsupported enclosure with a supported one.

630 - Disk remanufacture started

630.1

Info

A disk has started a remanufacture operation. (disk: channel: <channel index>, ID: <device identifier>, SN: <serial number>, enclosure: <enclosure number>, slot: <slot number>)

The system will rework the disk so that it can be reused. The operation will result in reduced capacity. Do not replace the disk until the remanufacture operation is complete. This can take a long time, and completion will be indicated by event 631.

Recommended action:

• No action is required.

631 - Disk remanufacture complete

631.1

Info

A disk remanufacture operation completed successfully. (disk: channel: <channel index>, ID: <device identifier>, SN: <serial number>, enclosure: <enclosure number>, slot: <slot number>)

The disk is available to be placed into a disk group, but will have decreased capacity because a head has been removed from service.

Recommended action:

• No action is required.

631.2

Warning

A disk remanufacture operation failed. (disk: channel: <channel index>, ID: <device identifier>, SN: <serial number>, enclosure: <enclosure number>, slot: <slot number>)

The disk should be replaced.

Recommended action:

• Replace the disk with one of the same type (SSD, enterprise SAS, or midline SAS) and the same or greater capacity. For continued optimum I/O performance, the replacement disk should have performance that is the same as or better than the one it is replacing.

632 - Flush/restore failure

632.1

Error

A flush restore failure occurred. (disk group SN: <serial number>)

An integrity check failed on data restored from cache.

Recommended action:

• Allow time for the partner controller to recover the data and unkill the controller.

635 - IOC PHY setting changed

635.1

Warning

An I/O controller (IOC) PHY setting was changed by a user. (link speed: <link speed>, state: <State>, port: <port number>, lane: <Lane>)

None.

Recommended action:

- No action is required.

636 - Killed by other controller

636.1

Error

The other controller killed this controller for an unknown reason. <detailed error information>

The system will automatically recover.

Recommended action:

- Please collect logs and contact technical support for further action.

637 - Killed because of heartbeat loss

637.1

Error

The other controller killed this controller because it stopped responding via the inter-controller heartbeat. <detailed error information>

The system will automatically recover.

Recommended action:

- Please collect logs and contact technical support for further action.

638 - Illegal memory access

638.1

Error

This is an illegal access to memory by the CPU. <detailed error information>

The system will automatically recover.

Recommended action:

- Please collect logs and contact technical support for further action.

639 - Access violation

639.1

Error

`Access violation in the software. <detailed error information>`

The system will automatically recover.

Recommended action:

- Please collect logs and contact technical support for further action.

640 - Divide by zero

640.1

Error

`The software attempted to divide by 0. <detailed error information>`

The system will automatically recover.

Recommended action:

- Please collect logs and contact technical support for further action.

641 - Assert or OSM debug

641.1

Error

`Detected an Assert or OSM debug error. <detailed error information>`

The system will automatically recover.

Recommended action:

- Please collect logs and contact technical support for further action.

642 - PCI fault error

642.1

Error

`Detected a PCI fault error. <detailed error information>`

The system will automatically recover.

Recommended action:

- Please collect logs and contact technical support for further action.

643 - NMI fault error

643.1

Error

`Detected a non-maskable interrupt fault error. <detailed error information>`

The system will automatically recover.

Recommended action:

- Please collect logs and contact technical support for further action.

644 - Firmware upload

644.1

Info

`Successfully uploaded firmware to the system. (target partition ID: <Partition ID>)`

None.

Recommended action:

- No action is required.

644.2

Warning

`Unable to upload firmware to the system. (target partition ID: <Partition ID>, status: <numeric value>)`

The firmware bundle is using an outdated format.

Recommended action:

Verify that you are using the correct firmware bundle. Only valid firmware bundles will be accepted.

644.3

Error

`Unable to upload firmware to the system. (target partition ID: <Partition ID>, status: <numeric value>)`

The encryption or bundle signature is invalid.

Recommended action:

Verify that you are using the correct firmware bundle. Only valid firmware bundles will be accepted.

645 - Invalid FRU data

645.1

Critical

`Could not retrieve valid FRU data. (type: OEM ID)`

None.

Recommended action:

Contact technical support. Provide logs to technical support personnel for analysis.

645.2
Critical

`Could not retrieve valid FRU data. (type: config selector)`

None.

Recommended action:

Contact technical support. Provide logs to technical support personnel for analysis.

645.3
Critical

`Could not retrieve valid FRU data. (type: midplane SN)`

None.

Recommended action:

Contact technical support. Provide logs to technical support personnel for analysis.

645.4
Critical

`Could not retrieve valid FRU data. (type: FDE information)`

None.

Recommended action:

Contact technical support. Provide logs to technical support personnel for analysis.

645.5
Critical

`Could not retrieve valid FRU data. (type: unknown)`

None.

Recommended action:

Contact technical support. Provide logs to technical support personnel for analysis.

647 - Controller crash due to CAPI hang

647.1
Error

`This Storage Controller is restarting due to an internal error.`

This Storage Controller experienced a management-interface hang and will restart to recover.

Recommended action:

- Please collect logs and contact technical support for further action.

651 - FDE disk erased

651.1

Warning

`An FDE disk has been erased. (disk: channel: <channel index>, ID: <device identifier>, SN: <serial number>, enclosure: <enclosure number>, slot: <slot number>)`

None.

Recommended action:

- No action is required.

652 - HW component error

652.1

Error

`Detected an error in a hardware component <Hardware Component>`

None.

Recommended action:

- Contact technical support. Provide logs to technical support personnel for analysis.

653 - PSU HW mismatch

653.1

Error

`Detected a power supply hardware mismatch <PSU Mismatch>.`

Enclosure power supplies must be either both Silver or both Gold.

Recommended action:

- Contact technical support. Provide logs to technical support personnel for analysis.

658 - check firmware-upgrade-health result event

658.1

Info

`The system health is sufficient to support firmware upgrade.`

None.

Recommended action:

- No action is required.

658.2

Warning

The system health is degraded and cannot support firmware upgrade. (number of pre-firmware upgrade tests failed: <number of pre-firmware upgrade tests failed>, pre-firmware upgrade failed tests: <number of pre-firmware upgrade tests failed>)

None.

Recommended action:

- Run the CLI command 'show system' and follow the recommended actions to fix the issues.

660 - Link speed capability

660.1

Warning

The SAS host topology has changed and the link speed is higher than the reported cable capability. (link speed: <link speed> Gb/s, cable speed: <cable speed> Gb/s)

None.

Recommended action:

- Replace the SAS cable with one that is capable of higher speeds.

661 - Certificate Store Change Event

661.1

Info

Certificate <Cert Name> has been activated for service <Cert Store Event>.

None.

Recommended action:

- No action is required.

661.2

Info

Removed user certificate and activated system-generated certificate <Cert Name> for service <Cert Store Event>.

None.

Recommended action:

- No action is required.

661.3

Error

Error activating default system-generated certificate <Cert Name> for service <Cert Store Event> (errorcode: <Cert Event Extra Data>).

None.

Recommended action:

Activate a valid system certificate for service Cert Store Event to function as expected.

661.4

Error

```
No system-generated certificate found for service <Cert Store Event>.
```

None.

Recommended action:

Activate a system certificate for service Cert Store Event to function as expected.

661.5

Warning

```
Removed default system-generated certificate <Cert Name> for service <Cert Store Event>.
```

None.

Recommended action:

Activate a default system certificate for service Cert Store Event to function as expected.

Deprecated events

No event codes are deprecated.

Removed events

No event codes have been removed.

Events sent as SMI-S indications

If the storage system's SMI-S interface is enabled, the system will send events as indications to SMI-S clients so that SMI-S clients can monitor system performance. For information about enabling the SMI-S interface, see the chapter about configuring the system in the Storage Management Guide for your product.

The event categories below pertain to FRU assemblies and certain FRU components.

FRU/event category	Corresponding SMI-S class	Operation status values that would trigger alert conditions
Controller	DHS_Controller	Down, Not Installed, OK
Hard Disk Drive	DHS_DiskDrive	Unknown, Missing, Error, Degraded, OK
Fan	DHS_PSUFan	Error, Stopped, OK
Power Supply	DHS_PSU	Unknown, Error, Other, Stressed, Degraded, OK
Temperature Sensor	DHS_OverallTempSensor	Unknown, Error, Other, Non-Recoverable Error, Degraded, OK
Battery/SuperCap	DHS_SuperCap	Unknown, Error, OK
SAS Port	DHS_SASTargetPort	Stopped, OK